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# ***JPRS Report***

# **Environmental Issues**

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# Environmental Issues

JPRS-TEN-90-013

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### Criticism Continues Over U.S. Johnston Atoll Chemical Destruction Plan

BK1909092890 Hong Kong AFP in English 0859 GMT  
19 Sep 90

[Text] Port Vila, Sept 19 (AFP)—The chairman of the South Pacific Forum, Vanuatu's Prime Minister Walter Lini, Wednesday described a bitter attack on the United States by forum Secretary-General Henry Naisali as unauthorised and undiplomatic.

Mr. Lini, who is in Japan, said in a statement released here that he was "deeply concerned" about Mr. Naisali's criticism of U.S. plans to use a north Pacific island as a chemical weapons incineration plant.

Heads of government of the 15 South Pacific Forum countries, meeting here last month, themselves expressed concern that the United States was using the Pacific as an "experimental area".

They singled out risks to the environment in bringing weapons from a U.S. Army base in West Germany for destruction at Johnston Atoll, and said they "felt very strongly" that the island "should not become the permanent toxic waste disposal centre of the world."

At a news conference in Suva on September 7, Mr. Naisali described the United States as "a trouble maker" and accused it of "playing cheap politics" with the lives of Pacific islanders.

In his statement, Mr. Lini said "he wanted to make it clear, as chairman of the South Pacific Forum, that he has disassociated himself from the reported remarks made by Mr. Naisali...and his own personal views about U.S. attitudes towards the South Pacific nations."

In a remark which the U.S. State Department called "deeply offensive", Mr. Naisali seemed to compare U.S. actions to the Iraqi invasion of Kuwait.

"Our problem here, I compare that one as the equal of what's going on in Kuwait at the moment, Mr. Naisali said.

"They're dealing with a problem of the Iraqi invading Kuwait. In here we are dealing with the problem of the United States dumping chemical weapons and destroying them at Johnston Atoll. The problem in the Middle East concerns life... The same applies equally to what's going on in Johnston Atoll. The lives of people are involved."

Mr. Lini said: "Mr. Naisali's unfortunate comparison between the proposed U.S. chemical weapons destruction facilities on Johnston Atoll with Iraq's invasion of Kuwait was both totally out of context and diplomatically inappropriate."

A spokesman at the forum headquarters in Suva said Wednesday that Mr. Naisali did not plan to comment for the present.

### GLOBE Legislators Meet in Brussels

90AN0349A Brussels EUROPE in English 21 Jun 90  
p 13

[Report: "Environment/EEC, US and Japan: GLOBE Brings Together European, American and Japanese Parliamentarians Who Intend To Take Joint Legislative Initiatives To Protect the Environment—Priorities Accepted"]

[Text] Brussels, 20 June (EU)—The Global Legislators Organisation for a Balanced Environment (GLOBE) is a very recent organisation which brings together, for the first time, parliamentarians from the European Parliament, the American Congress and Senate and the Japanese Diet, meeting to take joint legislative initiatives to meet the most urgent ecological challenges. GLOBE held, at the beginning of the month in Brussels, its first meeting which aimed at coordinating parliamentary action concerning:

a. The safeguard of tropical forests;

b. The integration of environmental norms in GATT regulations "before the final haggling and conclusion of agreements in December in Brussels", according to European deputy Tom Spencer; (GLOBE members are to put pressure on their respective governments in order to demand an evaluation of the impact on the environment of commercial agreements under discussion by requesting that the GATT working party on environmental affairs, which has not met since 1972, be "reactivated");

c. Stopping of exports of toxic waste towards developing countries;

d. Dumping toxic substances at sea (GLOBE recommends certain measures to be taken by the parties of the London Convention on sea disposal); and

e. A ban on whaling.

American deputy James Scheurer, president of GLOBE (who hopes to be able to count on Supreme Soviet members next year, present at the 1990 meeting as observers), has explained that the deputies were "determined to pressurise their respective governments to pay ever more attention to the protection of the environment. GLOBE members will also submit to their respective governments draft laws concerning environmental affairs". On the other hand, GLOBE's function will be to gather information on the different draft laws on the environment within the assemblies attended by the members and to distribute this information in the regions of the world covered by GLOBE. "Under no circumstances, insisted Mr. Scheurer, will GLOBE members represent their governments".

The president recognised that it was surprising not to have the participation of Third World countries, but the members of the organisation considered that it was "urgent to approach the main polluters", that is, the

countries which they represent, and which "should first of all clean their own door". GLOBE is not, however, forgetting the developing countries, for which it requests "relief from debt" and growth of technology transfers.

The vice-president of the organisation, European deputy Hemmo Muntingh, has insisted upon two convincing results of the meeting:

1. Confronted with the serious threat to tropical forests, in particular in Malaysia, GLOBE has adopted a recommendation asking governments to increase the price of tropical wood mainly imported into regions concerned, through a tax in favour of the environment, and also to take measures to reduce the quantity of wood available on the market. It would be necessary to reach an overall agreement on this issue between importing and exporting countries within the UNEP—United Nations Environmental Programme. GLOBE has also proposed the adoption of an international convention on the protection of world forests and not only tropical forests.

2. Despite the great differences of opinion between the EEC and the United States, on the one hand, and Japan, on the other, concerning whaling, GLOBE has succeeded, according to the vice-president, in adopting a joint position on the revision, in July, of hunting conditions by the international whaling committee: "All decisions on catching limits for commercial reasons must be respected by all parties." As for catches that certain countries justify for scientific reasons, these must correspond to scientific elements accepted by the Commission.

## EC, East European Environment Ministers Meet

### East European Problems

90AN0346A Brussels EUROPE in English 18-19 Jun 90  
p 7

[Report: "Environment/EEC-Eastern Countries Meet: Will and Necessity for Close Cooperation; the Seven "European" Republics of the USSR Wish To Take Part"]

[Text] Dublin, 18 June (EU)—"It was almost like a competition between Poland and Czechoslovakia to know which of the two countries was the most polluted," commented British minister for the environment, Mr. David Trippier, to express the spirit of the first ministerial meeting (on the initiative of the president of the Environmental Council of the EC, Irish minister Mr. Padraig Flynn) between the "Twelve" of the EC, Commissioner Carlo Ripa di Meana [responsible for energy and nuclear safety], and the ministers of the environment of the USSR, Hungary, Poland, GDR and Yugoslavia. The EFTA [European Free Trade Association] countries were also represented by the Swedish minister for the environment.

Further to catastrophic descriptions of the state of the environment by the ministers of Eastern and Central European countries, it was decided to launch the basis of a coordinated environmental policy at continental level. The Central and Eastern European countries have recognised that they should make the greatest part of the financial effort necessary to undo the ecological errors of their predecessors. Most of them have committed themselves to implementing radical plans to safeguard their environment. The Czechoslovakian minister, Mr. Josef Vavrousek, after having affirmed that, in his country, life expectancy is on an average seven years less than that in Western Europe, expressed his indignation that ecological imperatives will force two million people to change jobs.

Central and Eastern European countries have stressed that they were expecting the EC to give them the benefit of its experience in the matter. The latter is willing to assist its neighbours to the East and discussions will be initiated on the way in which to allow them to enter the European Environmental Agency. However, as the experts realise, its means are minimal in comparison with its needs. EUROPE recalls that the EC has, up until now, allocated ECU [European Currency Unit] 49 million for Poland and Hungary and that Commissioner Carlo Ripa di Meana hopes to grant a further ECU 60 million to the GDR, Czechoslovakia, Bulgaria, Yugoslavia and, possibly, Romania. For the time being, this last country has not sent a representative to the meeting in Dublin, thus confirming its isolation; the commissioner entrusted with environmental issues expressed his regret publicly at its lack of cooperation. The ministers have defined certain priorities and adopted conclusions to which EUROPE will return.

These priorities and conclusions concern in principle Central and Eastern Europe, not including the USSR. However, the Soviet minister for the environment, Mr. N. Vorontsov, has underlined the fact that seven Soviet republics are part of Europe and should, in consequence, benefit from the support of the Group of 24 and the EEC, including in the environmental field.

### Conclusions Detailed

90AN0346B Brussels EUROPE in English 20 Jun 90  
p 11

[Report: "Environment/EEC-Eastern Countries Meeting: Guidelines and Priorities of the Common Action Contemplated—Strong Concern About Certain Nuclear Plants"]

[Text] Brussels, 19 June (EU)—The first meeting at ministerial level between the EEC and the countries from Central and Eastern Europe was devoted to the environment and ended with the adoption of joint "conclusions" indicating guidelines and priorities for close cooperation. The main guidelines agreed concern:

- a. The need for reliable information on the real state of the environment in Eastern European countries: The

opening of the European Environment Agency (EEA) to these countries would be a starting point.

b. The priorities: Two priorities were indicated—nuclear power plants and water pollution. The FRG minister, in particular, strongly insisted on the need to deal with the safety of Soviet-designed nuclear power plants installed in Eastern European countries. As regards water, the Eastern ministers themselves (especially the Polish minister) stressed the catastrophic current situation.

c. The need to avoid any “environmental dumping”, i.e. avoiding the risk of companies setting up in countries where the environmental legislation is not very strict in order to circumvent more stringent regulations. A code of conduct is contemplated in that area.

The “conclusions” approved also underline the following elements:

1. The need for environmental policies at regional, national and world level in order to guarantee a high level of environmental protection. These policies should be based on the following elements: preventive action, priority intervention at source to repair environmental damages, and making polluters pay.

2. The need to provide for effective procedures to assess the environmental impact of the installation of new industrial companies in the countries of Central and Eastern Europe. The installation of Community companies in those countries should be encouraged. The latter should abide by a code of good conduct based on Community environmental protection standards or similar standards (see c above).

3. The “urgent” need to deal with the transfrontier effects of pollution. Trans-European cooperation will have to deal in priority with:

a. The effective control of pollution; b. The production and rational use of energy, with special emphasis on air pollution and the greenhouse effect; c. The safety of industrial installations, including nuclear plants, ensured through the application of effective control measures; d. The classification and the safe manipulation of chemical substances; e. The quality of water, notably rivers flowing through several countries and underground water, and sea pollution; f. The reduction, recycling and environmentally safe disposal of wastes and the implementation of the Basel Convention on waste management; g. The influence of agriculture on the environment; h. Soil erosion, the protection of forests and of the flora and fauna thanks to the establishment of a network of natural habitats; i. Land planning; j. The transfer of environmentally safe technologies, exchange of data and experts and cooperation in the area of training; k. The use of economic and tax instruments for environmental protection; and l. The promotion of education and public awareness of these issues, in cooperation with environmental NGOs.

4. Definition of an action plan, established in agreement with the ministers and the European commissioner in charge of the environment, Mr. Ripa di Meana, including the following elements:

a. Assessment of the state of the environment in all European countries, making use of the European Environment Agency to that effect as early as possible; b. Rapid revision by the ministers from Central and Eastern Europe of existing pollution control agreements, with EEC assistance; c. Priority to nuclear safety and to air and water pollution and d. Urgent enforcement, in the countries of Central and Eastern Europe, of standards and environmental impact review procedures applicable in the EEC.

#### **Ronneby Conference Adopts 19-Point Declaration** *90WN0279A Oslo AFTENPOSTEN in Norwegian* *4 Sep 90 p 8*

[Article by Nils Christian Helle: “Norwegian Involvement in Baltic Sea”]

[Text] Ronneby—Norway will participate in a cooperative commitment by the nations around the Baltic Sea to restore the ecological balance in the Baltic, according to the final declaration from the environmental conference in Ronneby.

The conference concluded yesterday with the adoption of a 19-point declaration that describes some very concrete objectives for the effort to clean up the Baltic Sea and turn it into what is referred to as a self-sustaining ecological system. The researchers say around 100,000 square kilometers, or roughly a third of the entire Baltic Sea, is totally lifeless today.

Prime Minister Ingvar Carlsson, who hosted the conference along with his Polish colleague, Tadeusz Mazowiecki, described it as “a breakthrough.” “We have all assumed a moral obligation to live up to the declaration’s 19 points,” he said at the end of the conference.

#### **High Level**

Environmental Affairs Minister Kristin Hille Valla commented that the major significance of the conference is that it was held at the prime ministerial level. For this reason the Ronneby declaration was very clear and binding.

Norway was invited—and has agreed—to participate in the working group that will be appointed to follow up the principles of the declaration. The members of the group are to be named by the 20th of this month. All the nations bordering on the Baltic Sea will participate in the group. So will Norway, Czechoslovakia, the EC Commission and the four financial institutions that were invited to attend the Ronneby conference as observers: the World Bank, the European Investment Bank, the Nordic Investment Bank and the European Bank for Reconstruction and Development.



**Baltic States**

A special problem is posed by the three Baltic republics which are now struggling with the worst environmental problems in the area. They have not been asked to join the working group and Lithuania did not attend the Ronneby conference due to disappointment over Sweden's failure to recognize its fight for independence from the Soviet Union. Prime Minister Ingvar Carlsson said yesterday that in spite of this the working group will find "pragmatic solutions" to this problem.

In the declaration from the meeting the countries promised to present concrete national plans for reducing emissions in the Baltic Sea by 31 January of next year. The working group will then coordinate these plans by the end of next year and the most important elements should be implemented by 1993.

**Technology**

The countries have promised to use the "best technology available" to treat emissions from environmentally detrimental industries and municipal sewage treatment plants. In addition they will cooperate with the International Maritime Organization (IMO) in an effort to reach an agreement on tanker design regulations in which double hulls would be one of the requirements.

A proposal concerning tax and duty relief for vessels with double hulls was included in one of the drafts of the final declaration but did not appear in the final version.

The declaration contains a section on strengthening "human contacts" in order to improve the environment in the area. It says that the intention here is to get nonstate economic, trade, scientific, cultural and information institutions involved.

**New Possibilities**

The events in East Europe have created entirely new possibilities for a cooperative effort to save the Baltic Sea. The developments since Sweden and Poland took the initiative for the Ronneby conference almost a year ago have further underlined these possibilities, according to Ingvar Carlsson. At the same time he stressed that they are embarking on a long-range effort and that it is quite impossible at this time to say what it will require in the form of economic, technical and human resources.

A report from the Stockholm Environmental Institute that was presented to the six government leaders and other ministers who attended the conference said that with an investment of 30 billion kroner in the period leading up to the turn of the century the Baltic Sea can become just as clean as it was in 1950.

**Soviet Research Ship Concludes Radiation Detection Expedition**

*LD1509223690 Moscow Domestic Service in Russian  
2100 GMT 15 Sep 90*

[Summary] The scientific vessel Akademik Boris Petrov has returned to Kaliningrad after a three-month expedition. The ship is fitted with "unique" equipment for detecting insignificant amounts of caesium-133 and strontium-90 in the sea and on the sea-bed. According to expedition head V. Karpov, the voyage aimed to "work out new methods of remote monitoring of the presence of sea-based nuclear weapons using the unique Sapfir complex designed in our institute".

A study was also carried out on the ecological situation in sections of the Black, Mediterranean, North and Barents Seas following the Chernobyl disaster. The findings make it possible to reach conclusions about Chernobyl's impact on the environment in those regions. The results have still to be analyzed in Moscow but it is already clear that radioactivity has increased in parts of the world ocean.

**International Seminar on Maritime Use of Nuclear Energy Opens in Murmansk**

*LD2409110290 Moscow TASS in English 1053 GMT  
24 Sep 90*

[By TASS correspondent Ildar Rekhimkulov]

[Text] Murmansk September 24 TASS—A scientific seminar devoted to the safety and ecology of nuclear energy at sea opened here today.

The five-day seminar, organised by the Soviet nuclear society, is being attended by Soviet, United States, Japanese, Danish and Finnish scientists.

In addition to scientific and practical work, participants will meet Murmansk residents, who are far from proud that Murmansk is sometimes described as the world's largest nuclear powered fleet base.

One of the main problems is to decommission nuclear-powered vessels, such as the Lenin icebreaker, which is now laying idle in the Kola Bay.

**Environment Meeting on Mediterranean Opens in Spain**

*LD2409145590 Madrid Domestic Service in Spanish  
1400 GMT 24 Sep 90*

[Text] In Palma de Mallorca, King Juan Carlos has made the opening speech of the CSCE meeting about the Mediterranean. The meeting will basically analyze the ecological problem threatening the Mediterranean, although the Persian Gulf conflict will enter into debates.

Good afternoon, Rosa Jimenez in Palma de Mallorca.

[Begin recording] [Jimenez] This meeting will constitute a call to our collective responsibility regarding the protection of the Mediterranean. This is what His Majesty the King Juan Carlos said in his welcome to the delegations from the 50 countries taking part in this third meeting on the Mediterranean taking place in the framework of the CSCE. The time has come, His Majesty said, for all of us to help restore the health of the Mediterranean and of our solidarity.

[Juan Carlos] The Mediterranean, which is the cradle of the spirit of conciliation, must find a new compromise between progress and the environment. It must show that the contradiction between technology and nature is a false conflict which can be overcome with a responsible culture.

[Jimenez] If we are in tune with the Mediterranean spirit, King Juan Carlos said, we will be able to build for ourselves an area of coexistence which will be an example for the rebuilding of a more healthy, solid, and peaceful world. Right now Spanish Foreign Minister Francisco Ordonez is giving the opening speech of the conference on the Mediterranean. [end recording]

#### **Israel Signs Agreement on Preventing Pollution of Mediterranean**

TA1709185090 Jerusalem Domestic Service in English  
1800 GMT 17 Sep 90

[Text] Israel has signed an international agreement to prevent pollution of the Mediterranean Sea. It became the last of all the Mediterranean countries to do so. The accord was first introduced 14 years ago. Israel first had to approve legislation barring pollution of the sea from land sources.

#### **Text of Hungarian Environmental Cooperation Agreement With USSR**

90CH00380A Budapest MAGYAR KOZLONY  
in Hungarian No 43, 10 May 90 pp 1004-1006

[Text] From the Minister of Environmental Protection and Water Management Serial No. 5

#### **Agreement on Environmental Cooperation Between the Government of the Republic of Hungary And the Government of the Union of Soviet Socialist Republics**

The Government of the Republic of Hungary and the Government of the Union of Soviet Socialist Republics (hereinafter the Contracting Parties),

Proceeding from the principles and objectives of the 7 September 1967 Treaty of Friendship, Cooperation and Mutual Aid between the Republic of Hungary and the Union of Soviet Socialist Republics,

Taking into consideration the resolutions of the CEMA member-states' economic summit in 1984, the objectives of the Comprehensive Program for Further Intensifying and Perfecting CEMA Cooperation and Developing

Socialist Economic Integration, as well as the principles of cooperation laid down in the Comprehensive Program for the CEMA Member-States' Progress in Science and Technology Through the Year 2000,

Striving to achieve environmental security as an integral part of comprehensive international security,

Bearing in mind the provisions of Final Act of the Conference on Security and Cooperation in Europe,

Attaching great importance to the further development and intensification of environmental cooperation, and

Working to carry out the social and economic tasks that the two countries have set for the intensive development of their respective economies, coordinated with the natural environment's protection and improvement, as well as with social development and health care,

Have agreed on the following:

Article 1—For the benefit of the two countries and their peoples, the Contracting Parties will develop cooperation on environmental protection and the rational use of natural resources and, through their joint activity, will contribute toward the solution of global environmental problems.

Article 2—Cooperation will be achieved in the following principal directions:

- The prevention of atmospheric pollution;
- Soil protection and the rational use of farmland;
- The rational use of water resources, and the prevention of water pollution;
- The exploration and analysis of environmental changes;
- The monitoring of the state of the environment;
- The protection of the flora and fauna, and the establishment of national parks and nature conservation areas;
- The study of environmental pollution's biological and genetic effects;
- The improvement of the environment in cities and other inhabited localities;
- Joint action to protect and improve the environment of districts along the common border;
- The development and spreading of low-waste and waste-free technologies and environment-friendly materials in industry, agriculture and other branches of the economy;
- The development and production of special equipment, instruments and materials for environmental protection, and the designing of structures for nature conservation;
- The mutual exchange of information about more significant events that threaten to spread pollution across the border, from the territory of one Contracting Party to that of the other Contracting Party;
- Mutual assistance in preventing environmentally harmful accidents, catastrophes and natural disasters, and in abating and cleaning up their effects; and

- The administrative and economic regulation of environmental protection, the system of environmental education and training, and the public's participation in environmental protection.

The Contracting Parties may define more precisely the enumerated principal directions of cooperation in the course of coordinating their cooperation.

Article 3—Cooperation between the Contracting Parties will assume the following forms:

- Joint research and technical development;
- The exchange of scientific-technical information and documentation, the lending of equipment and instruments;
- Joint professional conferences and consultations, and exchange visits by experts;
- The implementation of cooperation and specialization, and the solution of specific tasks, in the principal directions enumerated in Article 2 of the present Agreement; and
- The transfer of specialists, equipment and materials to help prevent pollution-causing accidents and natural disasters, and to clean up their effects.

The Contracting Parties may also agree on other forms of cooperation in the course of implementing the present Agreement.

Article 4—The Contracting Parties will ensure through their ministries, central agencies, enterprises, organizations and institutions (hereinafter cooperating organizations) the implementation of the tasks that the present Agreement specifies.

Responsibility for the coordination and organization of cooperation within the framework of the present Agreement will rest with, respectively, the Ministry of Environmental Protection and Water Management in the case of the Republic of Hungary, and the USSR State Committee for Environmental Protection in the case of the Union of Soviet Socialist Republics.

The aforementioned government organs will compile and reconcile the programs of cooperation on the basis of the cooperating organizations' proposals and work schedules.

Article 5—The Contracting Parties will appoint plenipotentiaries to expedite the implementation of the present Agreement.

The plenipotentiaries will meet at least once a year, alternating between the countries of the Contracting Parties.

The plenipotentiaries approve the programs of cooperation and decide questions pertaining to the present Agreement's implementation.

Within two months from the day the present Agreement becomes effective, the Contracting Parties will inform each other of the appointment of their plenipotentiaries.

The plenipotentiaries will set up working groups of experts as necessary.

Article 6—Proceeding from the present Agreement's objectives, the Contracting Parties will promote the maintenance and development of the cooperation established between cooperating organizations, as well as the establishment of new, direct mutual relations between ministries, central agencies, enterprises, organizations and institutions respectively.

The cooperating organizations may form temporary working groups to implement the tasks planned in the programs of cooperation.

Article 7—If the Contracting Parties perform on a contractual basis the work specified in the programs of cooperation, the contracts will regulate the questions of financing, invoicing, liability for performance, and conditions for sending experts abroad.

If no contract is concluded for such work, each cooperating organization performs its obligation at its own expense.

In the course of carrying out such work, experts are sent abroad on the basis of exchanges that do not involve any foreign currency outlays.

The Contracting Parties will conclude separate agreements on the conditions for providing assistance in the realization of environmental-protection projects.

The Contracting Parties will determine in separate agreements the lists of materials, technical equipment and services to be provided, and the conditions under which they will be provided, to help the cleanup of industrial accidents and natural disasters.

Article 8—Any questions concerning the protection of industrial property and patents that may arise in the course of the present Agreement's implementation are to be decided on the basis of the 12 April 1973 Agreement on the Protection of Inventions, Industrial Designs and Trademarks Within the Framework of Scientific and Technical Cooperation, and of other agreements on this subject to which the Republic of Hungary and the Union of Soviet Socialist Republics are signatories. International law shall apply to questions not regulated in the aforementioned agreements.

Article 9—In accordance with the provisions of the treaties and agreements that are in force between the Republic of Hungary and the Union of Soviet Socialist Republic, and on the basis of the two countries' domestic laws, the cooperating organizations will determine the conditions for the mutual transfer and utilization, or for the transfer to a third party, of the results achieved in joint activity undertaken to implement the present Agreement.

Article 10—The Contracting Parties are not liable for any performance the cooperating organizations undertake in contracts concluded on the basis of the present Agreement or in conjunction with the objectives specified in the programs of cooperation.

Article 11—Nothing in the present Agreement may be construed as prejudicial to any other agreement between the Contracting Parties or to any agreement between one of the Contracting Parties and a third party.

Article 12—The present Agreement will become effective the day the Contracting Parties inform each other, through diplomatic channels, that the present Agreement has been ratified in accordance with their respective domestic laws.

The present Agreement has been concluded for a period of five years. Its effectiveness will be extended for another five years each time, unless one of the Contracting Parties serves notice of its intention to terminate the Agreement at least six months before the Agreement's next expiration date.

Termination of the present Agreement will not affect the validity of contracts concluded on the basis of the present Agreement.

Signed in Budapest this 1st day of November 1989, in two copies, each copy in both Hungarian and Russian, either version being equally authentic.

For the Government of the Republic of Hungary: Laszlo Marothy

For the Government of the Union of Soviet Socialist Republics: Nikolay Nikolayevich Vorontsov

#### **Austrian Chancellor Urges Neighbors To Drop Nuclear Energy**

*AU1609171890 Vienna WIENER ZEITUNG in German 14 Sep 90 p 1*

[Unattributed report: "The Goal Is a Central Europe Without Nuclear Reactors"]

[Text] Chancellor Franz Vranitzky has confirmed his intention to persuade Austria's neighbors to drop nuclear energy. He said that the goal should be to turn Central Europe into a zone without nuclear reactors.

Vranitzky made this statement in the Chancellor's Office in Vienna yesterday [13 September], following talks with representatives of the Forum on Nuclear Problems which is in charge of examining the Slovak reactors at Jaslovské Bohunice.

In connection with the move against nuclear energy that the chancellor made at the meeting of the Pentagonal Association in Venice late in July, Vranitzky said that Italy intends to close its two nuclear power plants in the south of the country, and that the nuclear reactor at Krško in Slovenia will also be switched off. "So now the

only problem left is the CSFR and Hungary," said Vranitzky, defining his course.

At a later date, the nuclear reactors of Austria's western neighbors, Switzerland and the FRG, could eventually be closed, the chancellor said. The work of the experts examining Bohunice will presumably lead to the issue of aging nuclear power plants, and this topic will then be internationalized, said Vranitzky.

Vranitzky stressed that in view of the interim report given by the two forum chairmen, Professor Manfred Heindler and Helga Kolb, he does not see a reason to revise his negative position on Bohunice. He said that Austria's objections to this reactor have so far not been refuted. Nor does he expect the result of the expert commissions' work to "produce any serious arguments that might weaken these objections."

That the security standard of Bohunice, according to a report of the International Atomic Energy Agency (IAEA), "is not as bad as had been expected," is of "no importance" for the Austrian Government, said Vranitzky, and added: "We base our considerations only on the result of our own commission."

#### **CSFR Official Criticizes Austrian Nuclear Power Plant Demands**

*AU1909084890 Vienna DIE PRESSE in German 19 Sep 90 p 2*

[APA, "hs" report: "CSFR Nuclear Criticism of Vienna"]

[Excerpt] Vienna—On Tuesday [18 September] Karel Wagner, chairman of the CSFR Nuclear Energy Commission, came down harshly on Austria's criticism of the use of nuclear energy in the CSFR. On the fringe of the general conference of the International Atomic Energy Agency (IAEA) in Vienna, he said that Austria does not have the right to demand that foreign nuclear power plants be closed down. At the same time, he warned Vienna of international isolation because of its current anti-nuclear policy. He compared Marilies Flemming's [Austrian minister of environmental protection] call on the IAEA to cease its activities concerning nuclear energy with "a call on doctors not to care for sick people." [passage omitted]

#### **Austrian Chancellor Demands Temelin Nuclear Plant Study From CSFR**

*AU2709203090 Vienna ORF Teletext in German 1923 GMT 27 Sep 90*

[Text] Vienna—A hitherto secret study on the CSFR nuclear power plant of Temelin, which is under construction, has alarming results. Today the study, which was developed by the International Atomic Energy Agency [IAEA], was made public by the Green Alternative. Holzinger, nuclear expert of the Greens, compared the

carefulness in the nuclear power plant construction with the building of a "dog kennel."

Meanwhile, Chancellor Vranitzky has called on CSFR Premier Calfa to convey the study and "possible comments" to Austria. He also requested information from the IAEA. Environment Minister Flemming has announced an experts' hearing on this subject.

### **Soviet Authorities Release Norwegian Ecology Vessel**

*LD2409215290 Moscow Television Service in Russian  
2007 GMT 24 Sep 90*

[From the "Television News Service" program]

[Text] Today the detention imposed by the Soviet authorities on the vessel Junius [name as heard], which belongs to one of the Norwegian ecological organizations, was lifted. The vessel was detained after its crew took a sample of the water near Novaya Zemlya, where it is believed that nuclear weapon testing may resume before the end of September.

### **Norwegian Nature Group Wants Kola Cleanup, Writes to Gorbachev**

*90WN0218A Oslo ARBEIDERBLADET in Norwegian  
19 Jun 90 p 6*

[Article by Arne Bjørndal: "Dear Gorby..."]

[Text] Norway's Nature Preservation Alliance has given up on the Norwegian authorities. In order to halt the severe pollution of the Kola Peninsula by Russian industry, the environmental organization now writes a letter to Soviet President Mikhail Gorbachev.

"Big talk and little money are insufficient when 300,000 tons of sulfur dioxide are spewed across the Kola Peninsula and the border districts toward Norway," says Guro Tarjem, information officer of the Nature Preservation Alliance, commenting on the Norwegian government's efforts in one of the worst cases of industrial pollution to befall Norway.

### **Deadly Threat**

The effluents from the Kola Peninsula today constitute a threat to health and environment in both Finnmark and Finnish Lapland, writes the Nature Preservation Alliance in its letter to the Soviet president.

"We feel that a much stronger remedy is required than the one served up by Norwegian authorities so far. The situation is precarious. While the Norwegian authorities twiddle their thumbs, large sections of nature in the borderland opposite the Soviet Union are being destroyed," says Tarjem.

She claims that for several years atmospheric measurements have proven the existence of enormous discharges of sulfur dioxide by the nickel industry on the Soviet side of the border.

"When the authorities talk about Finnmark, it's mostly about fishing resources and high unemployment. We have 'forgotten' the terrible strain that nature is subject to," she says.

### **Not Naive**

In the letter to Gorby, the Nature Preservation Alliance writes that the two nickel factories on the Kola Peninsula—in the cities of Nikkel and Zapolnarij—emit more sulfur dioxide than all Norwegian industry combined. Moreover, the emission of such heavy metals as nickel, cadmium, and mercury is disturbingly high.

The Nature Preservation Alliance asks Gorbachev to exert pressure on Norwegian authorities to acquire state-of-the-art processing, purifying, and energysaving technology.

"Isn't it a little naive to write letters to Gorbachev?"

"Well, we don't think very highly of teamwork with either Norwegian or foreign politicians. It's our experience that many small efforts—exertion of pressure, debate in the media—yield favorable results. We think that Gorby is interested in the topic and in a dialogue with Norwegian authorities," says Guro Tarjem.

### **Two Million to Russians**

The government will probably grant as much as 2 million kroner to reduce harmful effluents from Russian factories on the Kola Peninsula. "The government has a responsibility for pollution of East Finnmark," says Odd Richard Olsen, under secretary in the Ministry of Trade and Industry.

A committee of under secretaries from the Ministry of Foreign Affairs and the Ministry of Trade and Industry, among others, will soon submit its report to the government.

"The state grant will go toward paying for and planning cooperative efforts by Norwegian and Russian companies," says Odd Richard Olsen.

### **Peanuts?**

"A drop of water in the ocean," says Guro Tarjem, information officer of Norway's Nature Preservation Alliance, expressing her view of the government's efforts. She refers to the significant emissions of sulfur dioxide, nickel, cadmium, and mercury which Russian industry is responsible for. Damage to woodland and other vegetation is no longer limited to the Kola Peninsula. Sections of East Finnmark and Finnish Lapland have also been hit hard.

Under Secretary Odd Richard Olsen admits that the amount of money seems small considering the serious pollution problems that East Finnmark is faced with.

It was at a press conference in Murmansk that Under Secretary Olsen submitted the government's future package of measures for reducing pollution in the north.

#### Norwegian Companies

Under Secretary Olsen hopes that several Norwegian companies will cooperate with Russian companies. Olsen points out that various Norwegian companies—Elkem, among others—are interested in participating in such projects.

"Elkem is no stranger to the Soviet Union. Company representatives have been to Nikkel several times," says Olsen.

Yet the question is whether Norwegian companies really are interested. Under Secretary Olsen admits that so far no Norwegian firms have contacted the Ministry of Trade and Industry about launching such a cooperative project.

Olsen thinks there is no doubt that the Russian authorities are interested in doing something about the huge pollution problems on the Kola Peninsula and in the Finnish and Norwegian borderlands.

#### Interesting

"A very interesting initiative," says Odd Liaklev, a project engineer for Elkem Technology in Kristiansand. He points out that in recent times the company has invested heavily in East European countries, Bulgarian and Czechoslovakia, among others. "We've visited the Nikkel Works on the Kola Peninsula several times. We ourselves think we have a lot to contribute," says Liaklev.

Concerning the nickel industry on the Kola Peninsula, Liaklev claims that Elkem will be involved in rehabilitating production companies and at the same time constructing purification systems. "We have very good technology in this field," he says.

He thinks the government's measures are a sensible investment.

#### Norwegian Grant to Soviets for Kola Cleanup Reported

90WN0218C Oslo AFTENPOSTEN in Norwegian  
18 Jul 90 p 32

[Article by Morten Fyhn: "Norway Will Give Soviets Environmental Aid"]

[Text] In order to secure a cleaner East Finnmark, Norway is ready to give the Soviet Union considerable economic aid to implement a cleanup campaign on the

Kola Peninsula. But it will probably be on the condition that the Russians buy Norwegian equipment.

"We must be prepared to finance measures to protect the environment beyond Norway's borders in order to clean up our own Norwegian environment," says Kai Eide, under secretary at the prime minister's office, to AFTENPOSTEN. Eide, who travels to Moscow today to discuss environmental issues, points out that Prime Minister Jan P. Syse has repeatedly said that Norway must pursue a more cost-conscious environmental policy. Investments in the environment must be seen in a broader perspective. The most important thing, according to the prime minister, is to attack the sources of pollution regardless of whether they are inside or outside Norway.

Backed by this politically official statement of will and convinced that the emission of sulfur dioxide from the two large smelteries on the Kola Peninsula is four times greater than that of all Norwegian smelteries, the Norwegian delegation will hold talks in Moscow Thursday and Friday with Soviet environmental authorities and the Foreign Affairs Ministry.

"We know that three conditions must be met if something is to happen on the Kola Peninsula," says Eide. "The first concerns will. For its part Norway has demonstrated a clear desire and willingness to participate in an environmental dialogue at the highest political level. We Norwegians therefore want measures against pollution of the Kola Peninsula to be discussed when the prime ministers of Sweden, Norway, Finland, and the Soviet Union meet at the Baltic Sea conference in Ronneby, Sweden, in early September."

When it comes to cleanup technology, the Norwegians are uncertain how far the Soviet Union has come in its decision making. In Moscow, under secretary Eide will emphasize Norway's profound concern about developments on the Kola Peninsula and at the same time put in a good word for Elkem's cleanup equipment. In order to give the Russians the best possible information, the delegation will include two Elkem representatives. There is reason to believe that the Russians will mainly use their own equipment, but to some degree also Finnish or possibly Norwegian equipment.

Cleaning up the Kola Peninsula environment will cost an enormous sum of money: people are talking about 4-5 billion kroner. The miserable Soviet economy cannot handle costly environmental measures at the pace Norway desires. Norway will therefore probably consider economic support for the Soviet Union. But at the same time Norway feels that Elkem should be considered when it comes time to choose technology. Eide will not comment on the issue, but it is probably a precondition for Norwegian aid that the Russians also make use of Elkem's products on the Kola Peninsula.

**Norway, Finland Urged To Assist in Kola Cleanup**

90WN0258A Helsinki HELSINGIN SANOMAT  
in Finnish 11 Aug 90 p 5

[Article: "Peace Scholar Johan Galtung Proposes: Nordic Countries Should Provide Technology for Cleaning Up Kola"]

[Text] Oulu (HS)—It does not pay for every Nordic country to try to solve on its own the ecological problems created by the Soviet Union; rather, they ought to begin to discuss them together—for example, how to reduce the enormous discharges [of pollutants] on the Kola Peninsula—insists world-famous peace scholar Johan Galtung.

In Professor Galtung's opinion, the Nordic Council is the best organization in which to conduct these discussions. "The Nordic Council ought to be ashamed of itself. Up to now it has been completely indifferent and passive."

For other reasons, as well, the Council should evolve as a counterweight to the European Community. Galtung proposes that it turn itself into an organization like the Council of Europe, the members of whose parliament would be elected by popular referendum.

In an interview granted HELSINGIN SANOMAT at the Nordic Arctic conference in Kemi, Prof. Galtung proposed that the Nordic countries jointly and free of charge provide the Soviet Union with the technology to reduce pollutant discharges on Kola. "The Soviet Union could gradually begin to pay for the renovations itself at a later date."

**'Soviet Union Has Other Worries'**

The Governments of Norway and Finland are drafting a joint offer to the Soviet Union of the new technology to be built into Kola production plants. Outokumpu and the big Norwegian company Elkem plan to jointly draft a custom-designed package for limiting discharges. According to our information, the plan will be redrafted next week, when Norwegian Prime Minister Per Syse's political under secretary of state, Kai Eide, meets with Prime Minister Harri Holkeri.

In Galtung's opinion, the problem of pollution on Kola is viewed differently on both sides of the border. "The affluent Nordic countries can afford to and have the resources to devote their attention to the environment, but the poor Soviet Union's chief worries are where it is going to get food and indispensable goods for its people."

In the professor's opinion, the Soviet Union cannot be judged by Nordic standards. "I understand that they are ready to enter into all sorts of collaboration over there," Galtung, who knows many Soviet foreign policy experts, assured us.

**'Nordic Council Needs Forceful Man'**

Galtung does not understand why they have not already dared to talk about foreign policy in the Nordic Council. "The situation in Europe has completely changed because the blocs have fallen apart."

"Strengthening the Nordic Council is in the air. Ordinary people, countries' systems for governing themselves, and the ability to cooperate are ready and waiting," Galtung thought.

"Where will we find a strong statesman who can push through a reform of the Nordic Council? What we need now is a statesman like Palme or Kekkonen."

Galtung believes that Green ideals will strongly unite the Nordic countries four or five years from now.

In Galtung's opinion, a strong Nordic Council is needed as a counterweight to the hysterical fascination with Brussels and will be needed when Eastern Europe's problems blow up in our faces.

**Restrain Fascination With Europe**

"When elephants fight, it's a good idea to stay away from them. When elephants celebrate a wedding, it pays to stay even farther away from them," Galtung called for restraint as regards the fascination with Europe by means of a Malaysian proverb.

In Galtung's opinion, the Baltic countries could be allowed to join the Nordic Council as associate members. If an expanded Nordic Council came of this, it would serve as a bridge to others as well, not to mention the Soviet Union, Karelia, and Ingermanland.

"I wouldn't even be surprised if the restoration of the part of Karelia that was surrendered were to be negotiated in the 1990's, just as the Soviet Union and Japan are now working on an agreement on the Kurile Islands. I'm sure that the Finnish Government is following these negotiations very closely."

**Norway Wants To Investigate Health Hazards**

Northern Norwegian environment officials want to collaborate more closely with us Finns in investigating discharges of pollutants on Kola. "We already have three automatic metering stations on Kola and a two-year-old ecological agreement with the Soviets," Ruija Province engineer Per-Einar Fiskebeck said.

Joint studies of the health hazards posed by pollutants are the next step in the many-sided collaboration between the Soviet Union and Norway on environmental concerns. Healthy people near the border on the Norwegian side of it are suffering from the polluted air.

"In Ruija they are demanding that the use of raw materials with a high sulfur content imported from Norilsk in Soviet production plants be terminated. The

local ore is much cleaner. When they began using ore from Norilsk on Kola, it was immediately obvious in Finland and Norway."

A Norwegian delegation of engineers has already had an opportunity to examine the techniques used at Kola production plants. "The method used at Outokumpu is over 10 times more effective than the one used at Vanyukov. In addition, the Finnish method is structurally concentrated, and this can be decisive in making one's choice," Fiskebeck said.

The strong civic movement kindled in Ruija has pressured Norwegian politicians and officials into action. Activists are demanding a rapid overhaul of the production plants in Nikel' and Zapolyarnyy, located a few kilometers away. "Four kilometers from Nikel', the 60-square-kilometer area of Jarfjorðfallet used to be the grazing ground for 1,800 reindeer. All the vegetation has died out in the area, and dead salmon float in the streams. In a couple of years' time, the catastrophe will be irreversible," environmental activist Tor Aarnesi, who was participating in the Nordic Arctic conference, said.

The industrial discharges emanating from Nikel' are equivalent to 290,000 tons of sulfur dioxide a year. This amount is over twice the amount of sulfur discharges produced in all of Norway.

#### **USSR Rejects Norwegian Reports on Nuclear Waste Sites**

*LD2609165690 Moscow TASS International Service in Russian 1424 GMT 26 Sep 90*

[TASS correspondents Mikhail Ivanov and Leonid Timofeyev report from the USSR Foreign Ministry press center]

[Text] Moscow, 26 Sep (TASS)—Gennadiy Gerasimov, head of the Information Directorate of the USSR Foreign Ministry, addressing a briefing today, rejected reports which have appeared in Norwegian media to the effect that nuclear waste sites are situated somewhere between Murmansk and the Norwegian border.

Citing information which came from the USSR Ministry of Atomic Power Engineering and Industry, the USSR Foreign Ministry spokesman stated that "there are no sites where dumps of such waste are situated in the referent region of Soviet territory."

The diplomat recalled that the Kola Nuclear Electric Power Station, with its four sets and infrastructure, is situated in this region. "In accordance with the procedures in force, the spent fuel is taken away from the site of the station," said Gennadiy Gerasimov.

#### **USSR Accepts Finnish Assistance in Kola Pollution Cleanup**

*LD2609190290 Moscow TASS in English 1826 GMT 26 Sep 90*

[Article by TASS correspondents Leonid Timofeyev and Mikhail Ivanov]

[Text] Moscow September 26 TASS—The reconstruction of the metallurgical production plant at the Pechenganikel complex will make it possible to considerably improve the ecological situation in the area of the Kola Peninsula, Soviet Foreign Ministry spokesman Gennadiy Gerasimov told a briefing here today.

The reconstruction decision was taken by the Soviet Government with due regard for Finland's offer containing terms for the crediting of the planned work, Gerasimov said.

The Soviet and Finnish sides believe that the technology worked out by the Outokumpu firm (Finland) will make it possible to substantially reduce the level of air pollution by sulphur dioxide and other harmful discharges.

The Soviet and Finnish governments instructed the enterprises and companies concerned to hold technical and commercial negotiations and report results before November 15 of this year.

#### **St. Kitts and Nevis PM Addresses UN Assembly on Environment**

*FL2409173390 Bridgetown CANA in English 1655 GMT 24 Sep 90*

[Excerpt] United Nations, Sept 24, CANA—St. Kitts and Nevis prime minister, Dr. Kennedy Simmonds, has called for more aid for the world's poorer countries that would enable them to protect their environment and proceed with their plans for development. In a speech to the 45th session of the United Nations General Assembly, Simmonds said that a rational approach to the environment should be taken by developing countries, one which encouraged "sustained development and environmental protection."

"Now that the industrialised countries have achieved outstanding levels of development, the environment notwithstanding, and we all share the adverse effects, they should be prepared now, to make additional resources available to developing countries for the protection of the environment while ensuring that projects designed to achieve sustainable development can proceed," he said.

Simmonds saw the need for links between industry and environmental protection that would pave the way for "improved quality of life." He added, that the environment should not be used as "a scapegoat, or as an excuse" to block the aspirations of developing nations. The prime minister criticised animal rights groups for being too eager to malign "the good name" of a country



simply because its farmers, for example, sought to protect their crops and their livelihood from destruction by animals, such as monkeys.

Simmonds said that his own country had "placed a high premium" on implementing a land use policy whose goal was increased food production, improved nutrition, and better health.

"We are striving now to diversify our formerly monocultural economy," he told the diplomats and other delegates in the general assembly's hall. "Tourism is an important part of that programme. It is clear that if our tourism industry is to grow and contribute meaningfully to the economy, then as island communities, we must protect our seas and oceans which give life to our important marine resources, and our coastal waters."

The whole issue of the environment was a major subject which could only be properly addressed by developing countries with help from the UN and industrial nations, he said. [passage omitted]

#### **Brazil, Japan Sign Mining Pollution Control Agreement**

*PY2209125890 Brasilia Domestic Service in Portuguese  
2200 GMT 21 Sep 90*

[Text] Brazil and Japan have signed a technical cooperation agreement to build a mining pollution control center.

Japan will provide [words indistinct] \$720,000 while Brazil will provide \$50,000 and the center facilities.

Japan will also donate laboratory and (?portable) equipment that will be used to control pollution.

The agreement, which was signed by the National Department of Mineral Production [DNPM] and the International Cooperation Agency, provides for the training in Brazil and Japan of 12 Brazilian technicians over 4 years.

DNPM Director General (Elmer Salomao) highlighted the center's importance to environmental preservation.

[Begin (Salomao) recording] The most important thing is that this agreement marks the beginning of a process to train specialists in mining pollution control. From now on, mining pollution control will be permanent. We hope that this step will be fundamental for controlling mining pollution. Control of such pollution was previously done in an unorganized manner. The new center will train government and private technicians as well as personnel from other organizations. We even expect to cooperate with IBAMA [Brazilian Institute of Environmental Affairs and Renewable Natural Resources]. Some IBAMA technicians will be trained so that they will also become acquainted with mining pollution problems. [end recording]

According to (Salomao), in two years DNPM technicians will be able to be instructors at the center and to provide modern techniques to mining companies in Brazil and in Latin America.

#### **Papua New Guinea PM Says Pacific Nations Given Lowest Priority**

*BK2509093490 Melbourne Overseas Service in English  
0500 GMT 25 Sep 90*

[Text] Papua New Guinea's prime minister, Mr. Rabbie Namaliu, told the [United Nations] general assembly that for a long time the interest and well being of South Pacific countries have been accorded the lowest priority by the world's military and economic powers.

The Pacific News Service, in a dispatch from New York, quotes Mr. Namaliu as saying Papua New Guinea was vitally concerned about the Pacific, and like other countries in the region, wish to develop under conditions of peace and security. He said most Pacific nations depended on a small number of marine and agricultural products for their livelihood and export incomes, and for this reason, had devised conventions to protect the environment.

These included the South Pacific Nuclear Free Zone Treaty, the Convention for the Protection of the Environment and its Natural Resources. Mr. Namaliu said Papua New Guinea therefore strongly deplored French nuclear testing in the South Pacific and the dumping of toxic waste which threatened the region's fragile ecosystem. He also condemned what he called the wanton exploitation of the region's resources as occurred with driftnet fishing and expressed concern about global warming.

#### **Spanish Government Supports Antarctic Ecological Protection**

*LD2109130790 Madrid in Spanish to Europe  
1000 GMT 21 Sep 90*

[Text] The Spanish Government has announced it will support the ecological protection of the Antarctic at the forthcoming extraordinary conference on the Antarctic Treaty in Chile in November. This agreement, in effect since 1981 and signed by 35 countries, lays down the norms for scientific research and international cooperation on the continent. The Spanish Government's stance contrasts with that set out by other countries advocating the exploitation of Antarctic mineral resources. Spain has thus decided not to ratify the Wellington convention regulating mining activities in the Antarctic, which was approved in 1988 but has not yet come into effect.

The Spanish Government's decision is based on the report drawn up by the Inter-Ministerial Commission on the National Antarctic Program, which advocates the protection of the continent, among other reasons, because of its influence on the earth's climate and its great ecological value as a redoubt for important species.

## CHAD

### Government Launches Tree Planting Campaign To Combat Desertification

90WN0271A Ndjamena AL-WATAN in French  
4-10 Aug 90 pp 1-2

[Article by B. Mahamat N'Gartomia; first paragraph is AL-WATAN introduction]

[Text] The president of the republic, chief of state, and chairman-founder of the UNIR [National Union for Independence and Revolution], comrade Hajji Hissein Habre, officially kicked off the 1990 edition of National Tree Week last 3 August at the Farcha site in the First Arrondissement on the western outskirts of Ndjamena. Actively participating in this traditional ceremony—the eighth of its kind since the start of the Third Republic—were members of the government and the UNIR Central Committee, the diplomatic corps, and civilian and military authorities, all surrounded by a large crowd of UNIR members. About 15,000 young plants were set out in an area covering 10 hectares.

The fight against desertification—that phenomenon which is dangerously threatening our national heritage—requires a general mobilization and individual and collective awareness. National Tree Week, which was instituted in our country to combat desertification, is no longer a matter for the state but one that calls out to all the sons of Chad. In his capacity as Chad's eldest son, the president of the republic and chief of state, Hajji Hissein Habre, has always been concerned about this matter. He made a personal visit to the official site in Farcha on 3 August 1990 and planted his young tree—a Nile acacia. That very significant gesture by the president of the republic, which was then repeated by everyone at the site, is necessary and indispensable.

In the opinion of the president of the republic, who expressed his satisfaction at going out to plant a tree, all Chadians must take up the challenge against desertification. He said that far from being considered an inevitability, the desert can be overcome, because scientists have recommended measures to be taken to halt its advance. To do so, only continuous work, determination, and the will to defeat the scourge at all costs will make it possible to achieve significant results through the efforts made.

On the eve of the official start of National Tree Week, the minister of tourism and environment, M'Bailao Naimbaye Lossimian, reminded our fellow citizens of the usefulness of the fight against desertification, a problem that is facing all mankind. He saluted the chief of state's personal contribution to the search for solutions aimed at remedying the phenomenon in question. The government of the republic has made its own, this battle against the lightning-fast advance of the desert. The reason is because our country, which has experienced the terrible years of drought and, as their corollary,

the steady deterioration of ground cover, the destruction of livestock and, consequently, the destruction of the environment in general, is still experiencing the effects of desertification.

Implementation of the interim development plan and the national policy plan recently presented in Geneva, Switzerland, and the preparation and adoption by the government in 1989 of the master plan for combating desertification and of the Forest Code represent other encouraging efforts fitting in unflaggingly with the Chadian people's manifest will to close the door on the specter of desertification. The timely strategies devised by the Action Committee for National Tree Week, the membership of which includes various experts from the Ministry of Tourism and Environment, are aimed at restoring the necessary equilibrium in a mild and favorable environment.

## NIGERIA

### Government Takes Measures To Preserve Wildlife

90WN0289A London AFRICA ANALYSIS in English  
3 Aug 90 p 9

[Text] Calabar—Increased conservation and a depletion of reserves should ensure the virtual cessation of Nigerian natural timber exports within the next two or three years. As part of its new 'green' drive, the government has greatly extended the Oban National Park, one of Nigeria's last reserves of virgin rain forest. It is to be complemented by a northern extension which will almost double its area and protect one of the few gorilla bands surviving in West Africa.

Awareness of environmental issues has grown rapidly in Nigeria since the attempt to dump Italian toxic waste in the delta region north of Calabar. Worries have grown with the decline in rainfall across the north of the country, which has greatly reduced the extent of Lake Chad. The massive demand for farmland and timber threatens to destroy all the country's remaining wet tropical forest by the mid-1990s.

'Green' issues have become fashionable among the young professionals of Lagos, and the Nigerian Conservation Foundation has become influential, acquiring President Ibrahim Babangida as its patron. The decision to extend Oban—itsself only two years old—is a sign that this change of mood is being transformed into political action, despite strong lobbies of timber and farming interests.

Oban covers some 250,000 sq km in the Cross River region, surrounded by a 'support zone' of further 250,000 sq km where, it is promised, the activities of farmers and loggers will be tightly restricted. The new extension, proposed by the Worldwide Fund for Nature, which is helping to run Oban, comprises a further

150,000 sq km park just to the north at Boshi Okwangwo; it amounts to a cautious vote of confidence in Oban's first two years.

With timber exports now of minimal significance to the national economy, the government has realised that, in the long term, it could earn much more foreign exchange from wildlife tourism, as francophone countries in West Africa have done for years. It also knows that the new policy will please donors at a time when the World Bank is trying to raise funds for a major programme of environmental measures in Nigeria. This money is badly needed to rejuvenate the demoralised and underfunded forestry service.

## SOUTH AFRICA

### Environment Minister Discusses Gillnetting Policy

*MB1809113690 Johannesburg SAPA in English  
1121 GMT 18 Sep 90*

[Text] Pretoria Sept 18 SAPA—Environment Affairs Minister Gert Kotze on Tuesday [18 September] challenged Earthlife Africa or any other organisation to prove claims that fishing vessels with pelagic gillnets have been legal in South African waters after July 31.

He was reacting to an Earthlife Africa demand that the "present permit system should be scrapped".

Earthlife Africa was quoted in a report on Monday as saying "Mr. Gert Kotze's undertaking earlier this year that no more permits would be issued after July 31 had... been altered.

"It is extremely concerning [as received] to discover that Gert Kotze has issued permits to Taiwanese vessels carrying gillnets to dock at Cape Town harbour till the end of the year."

An emphatic Mr. Kotze replied on Tuesday that "any vessel with a gillnet or gillnetted fish on board after July 31 is not only illegal to be in any South African port but also illegal in the country's economic fishing zone, which stretches up to 360km from the coast".

He reiterated that no permits were issued to allow any vessel with a gill net or gillnetted fish in South Africa's fishing waters.

"The use of gillnets in our fishing waters has been banned for many a year."

### Report Details Environmental Hazards of Coal Mining

*MB1809173890 Johannesburg SAPA in English  
1649 GMT 18 Sep 90*

[Text] Pretoria Sept 18 SAPA—A glowing report, praising the eastern Transvaal highveld's coal mining and petrochemical industries—as "showing great

responsibility towards the environment, especially in the rehabilitation of mined areas"—was released by the Department of Agriculture in Pretoria on Tuesday [18 Sep].

The report is the result of a two-year joint investigation to investigate the results of the extensive coal mining activities of the region on the agricultural environment.

The eastern Transvaal highveld has some of South Africa's finest farming area, covering about 3.6 million hectares—yet it is also mined increasingly for its high-quality coal, which underlies some 2.7 million hectares and represents some 49 percent of SA's [South Africa's] mineable coal reserves.

In 1988 [words indistinct] were expressed to the government from the farming community that the environment would be permanently damaged or even made sterile due to the steadily increasing coal-mining and petrochemical activities.

The eastern Transvaal's soil is particularly suitable to produce a wide variety of field crops, vegetables and animal and timber products, with some 2.4 million hectares high potential agricultural land and 1.4 million hectares low potential land—yet only 1.2 million hectares are actually under cultivation.

Some 3.6 million (66 percent) hectares now are used for extensive grazing and for timber production.

In response to the environmental worries of the region's farmers, the government launched a two-year scientific investigation, not only to perform a cost analysis of the high extraction of the region's coal, but also to establish the loss of income to agriculture as a result of the damage and sterilisation of agricultural resources.

On Tuesday, the long-awaited report was published by the Department of Agriculture.

Some of the report's findings:

- About R[and]3,418 million in capital investment was made in the area for coal mining between 1978 and 1987; and R16,988 million for power generation and the petrochemical industry.
- Forty percent of the coal mines extract their products with the opencast mining method, 46 percent with the bord-and-pillar method, and 14 percent underground.
- The environment is definitely affected by the mining activities, the large-scale generation of electricity and the development of the petrochemical industry. Surface and ground-water and the atmosphere's quality are adversely affected.
- Air pollution in certain areas has already reached such levels that it could have an adverse effect on human activities.
- Climatic conditions on the eastern highveld, moreover, are extremely unfavourable to disperse atmospheric pollutants—and under certain weather conditions, high pollution levels are found.

Some conclusions:

- Agriculture and mining must cooperate closely to make sure that the area's natural resources can all be utilised to the fullest.
- The coal mining and petrochemical industry play an important economic role in the area, and in addition, coal is the largest earner of foreign exchange for South Africa after gold, while it also provides relatively cheap electricity for the country.
- The mining industry shows great responsibility towards the environment, especially as far as the rehabilitation of mined areas is concerned.

Some major identified problems which cannot easily be solved:

- The agricultural land's potential is disturbed: water-holding capacity, effective depth, the soil's fertility and stability all are affected by coal mining activities.
- Waterlogging and salination of rehabilitated land occurs, and crop production can no longer take place successfully on such land unless remedial measures are taken. Moreover, the market value of such rehabilitated land is fixed much lower by financial institutions than virgin land prices in the region.
- Water runoff and soil erosion caused by opencast mining and underground methods.
- Agricultural land taken up by waste dumps from mining, creation of uneconomic farming units and the construction of processing plants can be expected to cause increasing problems for agriculture as mining is continued and larger areas become unsuitable for farming.
- Water and air pollution create serious problems—yet the greatest cause of air pollution in the region is not coal mining itself, but rather the combination of pollution from thermal power stations and smouldering coal waste dumps.
- The Agricultural Departments complained that they did not have sufficient say about the rehabilitation of land for agriculture once the coal on that land has been mined. The report thus considered it essential that the Agriculture Departments should be consulted in drawing up and implementing rehabilitation measures and requirements.

- The commission recommended that a water runoff control programme be launched to prevent this problem in the mining areas.
- Further research should be launched into the impact of mining activities on botanical, water, landscaping and economic problems in the region.

The Cabinet has already approved the appointment of a liaison committee, consisting of representatives from six government departments and four private organisations which would coordinate effective communication between agriculture and the coal mining industry.

Moreover, an agricultural development centre is to be established at Ermelo to further research the production potential of agricultural land, agricultural engineering matters and alternative farming enterprises—and to set up lines of closer communication between private organisations such as the Chamber of Mines, ESKOM [Electricity Supply Commission] and SASOL [South African Coal, Oil, and Gas Corporation].

**Agriculture Minister Comments on Effects of Coal Mining**

*MB1809094990 Johannesburg Domestic Service  
in English 0900 GMT 18 Sep 90*

[Text] The minister of agriculture, Mr. Jakob de Villiers, says the natural resources of the eastern highveld must be exploited, administered, and protected jointly.

Speaking in Pretoria where he announced the publication of a report on the long-term consequences of high-intensity coal mining in the eastern highveld, he said that the natural resources could not be reserved for the exclusive use of either the agricultural or the mining industries.

Mr. de Villiers said that the immediate consequences of coal mining on agriculture were not as extensive and destructive as first suspected generally. The survey, which was conducted under the chairmanship of the minister of agricultural development, Dr. A.I. van Niekerk, was adopted unanimously by all organizations involved in it and the report has already been adopted in principal by the cabinet.

## Report Details 1989 Inner Mongolia Environment Status

SK2809045590 Hohhot NEIMENGGU RIBAO  
in Chinese 30 Aug 90 p 3

[Communique on the 1989 environmental situation of the Inner Mongolia Autonomous Region issued by the autonomous regional urban and rural construction and environmental protection department—date not given]

[Text] Based on Article 11 of the "PRC Law on Environmental Protection," the 1989 "Communique on the Environmental Situation of the Inner Mongolia Autonomous Region" is hereby made public:

### 1. Situation in Environmental Pollution

#### A. Atmospheric Environment

Our region's atmospheric environment, generally speaking, was good, and pollution occurred mostly in the four cities under the jurisdiction of the region and some cities where league administrative offices were located.

Coal amounted to 90 percent of the energy resources of our region, and burning of great amounts of coal created smoke pollution. Major pollutants were suspended particles and sulfur dioxide, and their density is in direct ratio to the amount of coal burned. According to statistics of the entire region, the 1989 smoke and dust discharge volume was 649,000 tons, an increase of 7.7 percent over the preceding year; and the sulfur dioxide discharge volume was 490,000 tons, a decline of four percent. In cities, air pollution was more serious in the heating season of winter than in the nonheating season of summer. The atmospheric quality of the cities in the eastern part of the region was better than the cities in the western part, and the atmospheric quality of the cities and towns of banners and counties was better than the cities of leagues and cities [shi 1579].

According to the monitoring work of the regional atmospheric environmental quality monitoring network, the 1989 annual average of the daily average amount of the total suspended particles of the cities throughout the region was 612 micrograms/cubic meter, which was higher than the average of 526 micrograms/cubic meter as was registered in the cities in northern China. Except for very few cities, the 10 major cities of the region exceeded the standard in their total amount of suspended particles, but showed improvement as compared with the preceding year. The annual average of the daily average amount of sulfur dioxide of the cities throughout the region was 99 micrograms/cubic meter, which was lower than the average of 105 micrograms/cubic meter as was registered in the cities in northern China. Sixty percent of the 10 major cities of the region exceeded the standard in their amount of sulfur dioxide. Compared with the preceding year, three cities showed alleviation in their pollution, five cities became more serious, and the remaining showed no great change.

#### B. Water Environment

The water quality of the trunk rivers of our region's surface water was basically good. River sections that ran through cities showed more serious pollution. Water pollution mainly came from industrial waste water, and the major pollutants were oxygen-consuming organic substance, mercury, and volatile phenol.

According to statistics of the entire region, the 1989 industrial waste water discharge volume was 262.74 million tons, a decline of 36.66 million tons, or 12 percent, from the preceding year. In the industrial waste water, the discharge volume of heavy metals (mercury, cadmium, lead, and hexavalent chromium) was 86.41 tons, an increase of 18.7 percent over the preceding year; the discharge volume of arsenic was 1.88 tons, down 45 percent; that of cyanide was 20.39 tons, down 8 percent; that of phenol was 445.56 tons, up 1.8 percent; and that of petroleum 538.72 tons, down 32.6 percent.

According to the monitoring work of the regional environmental and water quality monitoring network, pollution of the six major river systems of our region was alleviated in 1989, in general, as compared with the preceding year. However, the water quality of the river sections in major cities aggravated at varying degrees due to an increase of pollution discharge volume. The water quality of the trunk lines of the Huang He river system was acceptable. The water quality of Wuhai and Bayannur League sections reached the second-grade standard for surface water. The water quality of Baotou section was third grade mainly because of the pollution of phenol, mercury, lead, and cadmium, and because of the pollution of oil which exceeded the standard by five times. The water quality of the section of Hohhot City was third grade. Hexavalent chromium, lead, mercury, and cadmium were detected, and COD [as published], arsenic, and oil exceeded the standards slightly. The water quality of the Ulanqab League section reached second-grade standard. The tributaries of Huang He, especially Kundulun He in Baotou and Dahei He in Hohhot, were seriously polluted, and their water quality was below the third-grade standard for surface water and the standard for water for agricultural use. The water of the Nen Jiang water system was fairly clean and was basically unpolluted. The water quality of the Eerguna He river system was acceptable, but pollution of volatile phenol in some sections exceeded the standards slightly. The pollution of organic substance, volatile phenol, nitrite nitrogen, and lead of Laoha He and Xilamulun He—larger tributaries of the Xiliao He river system—aggravated as compared with the preceding year, exceeding the standards by nearly two times. The pollution of volatile phenol and hexavalent chromium of the Yongding He river system was alleviated as compared with the preceding year, of which the pollution came below the standards instead of over. However, the pollution of mercury was aggravated and exceeded the standard by 23 times in some sections. The Luan He river system was basically unpolluted.

In general, the water quality of the lakes throughout the region was basically good, but the saline-alkali content

and nutritious substance of the Wuliangsu Lake rose, and the highest COD content exceeded the standard for the surface water for fish breeding by 58 times [sentence as published]. The pollution of mercury and volatile phenol also exceeded the standards, making fish output decline notably. The chloride content of Daihai Lake exceeded the standard by three times, and showed an increase of three times over the preceding year. The Huanghai Lake, in particular, had dried up by two-thirds by the end of 1989.

#### C. Noise Pollution

Judging from our monitoring work of the four cities under the jurisdiction of the region, 50 percent of the areas exceeded the standard for the average equivalent sound degree of road traffic noise, showing a decline from the preceding year. The noise of urban functional areas exceeded the standard universally, the noise pollution situation, which exceeded the standard, of "residents' cultural and educational areas" and "mixed commercial and residential areas" remained the same as in the preceding year, the standard-exceeding rate of the "mixed industrial, commercial, light traffic, and residential areas" dropped from 100 percent in the preceding year to 67 percent, and "areas where industries were concentrated" reached the standard as in the preceding year.

#### D. Industrial Residue Pollution

According to statistics of the entire region, 18.73 million tons of industrial residues were produced in 1989, an increase of 2.63 million tons, or 16 percent, over the preceding year. The accumulative total of industrial residues reached 135.1 million tons, an increase of 12.93 million tons, which occupied 31.8 million square meters of area, an increase of 7.65 million square meters.

## 2. Situation in Ecological Environment

#### A. Situation in Forests

According to a 1988 investigation of the forest resources of Inner Mongolia, the region had 32,692,600 hectares of land for forestry use, accounting for 27.64 percent of the total area of the autonomous region. In the land for forestry use, 42.32 percent, or 13,836,400 hectares, were forests, and among the forests, 1,100,500 hectares, or 8.5 percent, were cultivated forests. Compared with the investigation conducted in 1980, the acreage of land for forestry use declined by 11,407,400 hectares, and the annual decrease rate was 3.2 percent. The acreage of forests increased by 96,300 hectares, and the annual net increase rate was 0.1 percent. The region's forest coverage rate was 13.51 percent, 0.24 percent higher than in 1980.

For the on-going state project to build shelterbelts in north, northwest, and northeast China, Inner Mongolia afforested 208,400 hectares of land in 83 banners and counties in 1989, of which trees on 11,800 hectares were planted by planes and 44.46 million trees were planted

around houses and villages and along roads and rivers. By 1989, access to 1.687 million hectares of mountains was restricted for tree planting purpose.

In 1989, the region continued to carry out the tree planting activities, and planted 39.8 million trees, averaging 3.3 trees per capita.

#### B. Situation in Grassland

According to 1989 statistics, the region had 86.667 million hectares of grassland, of which 78.46 percent, or 68 million hectares, were usable. Deteriorated grassland totaled 29.92 million hectares, accounting for 44 percent of the usable grassland. Of the deteriorated grassland, 5,086,400 hectares, or 14 percent, were seriously deteriorated. Compared with 1965, the acreage of grassland declined by 6.15 million hectares, the acreage of deteriorated grassland increased by 28.66 million hectares, and grass output dropped by 30 percent.

#### C. Situation in Land

The region had 5.33 million hectares of cultivated land, and the average annual amount of land used for construction was 13,000 hectares, of which 4,300 hectares were cultivated land. A total of 32.6 million hectares of land became sandy land, 525,000 hectares became secondary salinized land, and 18.66 million hectares suffered soil depletion.

#### D. Situation in Nature Reserves and Kinds of Animals and Plants

The region built 12 nature reserves of various types, of which one was of national level, four were autonomous regional level, and seven were county level. The Inner Mongolia's Xilin Gol Grassland Nature Reserve was listed as an international human and biosphere protection zone. The acreage of the region's nature reserves totaled 1,947,700 hectares, accounting for 1.65 percent of the total acreage of the region.

Ninety-seven key animals protected by the state lived in our region, and the region had 100 kinds of precious and rare wild plants that faced imminent danger.

## 3. Environmental Protection

In 1989, under the leadership of the autonomous regional people's government, all localities throughout the region conscientiously implemented the central decision on "improving the economic environment, rectifying the economic order, and deepening the reform." Focusing on the environmental protection principle of "paying attention to management, laying foundations, and stressing practical results" and emphasizing the enforcement of the "PRC Law on Prevention and Treatment of Atmospheric Pollution" and comprehensive improvement of urban environment, they actively participated in the economic improvement and rectification, thus achieving new progress in our region's environmental protection work.

In 1989, to enhance the people's sense of respect for the legal system, the autonomous regional people's government listed the "PRC Environmental Protection Law (for Trial Use)" as a law to be absolutely enforced, and conducted large-scale regionwide inspection on the enforcement of the environmental protection law. In this way, the problems that laws were not enforced strictly, laws were not abided by, and power replaced laws were corrected, and people enhanced their initiative in acting according to law.

In 1989, in order to implement the guidelines of the third national environmental protection conference, the autonomous regional government relayed a "report on implementing the guidelines of the third national environmental protection conference" issued by the autonomous regional urban and rural construction and environmental protection department, and urged all localities and departments to continue to conscientiously institute the three old systems of "doing three fields of work simultaneously," "making environment an influential factor for appraisal" and "collecting fees for discharging pollutants." Meanwhile, it actively popularized the "responsibility system for environmental targets," and the systems of "quantitative appraisal of comprehensive improvement of urban environment," "certificates for discharging pollutants," "concentrated control of pollution" and "improvement within a fixed time." It also issued a "circular on enforcing the system of quantitative appraisal of comprehensive improvement of urban environment," and decided that the autonomous regional people's government will appraise the cities of Hohhot, Baotou, Chifeng, and Wuhai under the jurisdiction of the region in line with the 20 targets stipulated by the state, and that league administrative offices will appraise the cities where the league administrative offices were located in line with the eight targets stipulated by the autonomous region so as to strengthen the supervision and management of the environment.

The 1989 direct investment in pollution prevention and treatment (excluding investment in the infrastructural facilities for improving urban environment) totaled 73.13 million yuan, a decline of 39.6 million yuan. Of the total, the investment in the construction projects of which "three fields of work are done simultaneously" totaled 20.78 million yuan, the funds for enterprises and establishments to treat pollution totaled 51.16 million yuan, and pollution discharge fees used in regional comprehensive prevention and treatment of pollution totaled 1.19 million yuan.

Thanks to strengthened environmental management and the funds invested in it, our region achieved fairly good results in preventing and treating pollution and protecting the ecological environment in 1989. Smoke and dust elimination rate reached 60 percent, 13 percent higher than in the preceding year. Waste gas treatment rate reached 51 percent due to improved production technology, 8 percent higher than in the preceding year. Boiler renovation rate rose from 45 to 52 percent.

Industrial furnace and kiln renovation rate was 43 percent, basically the same level as in the preceding year. Industrial waste water treatment rate rose from 25 to 28.9 percent, and the rate of up-to-standard treated waste water from 41.5 to 46.3 percent. The amount of industrial residues treated totaled 13.29 million tons, increasing by 1.05 million tons over the preceding year, and the amount of industrial residues comprehensively utilized totaled 2.26 million tons, the same level as in the preceding year. The total amount of fines collected for environmental pollution dropped as compared with the preceding year. As one of the 32 cities of the country to be particularly appraised, Hohhot City ranked eighth in environmental quality in 1989, better than in the preceding year. Thanks to the autonomous region's consistent efforts to attach importance to developing and protecting forest and animal husbandry resources, the trend of deterioration in the ecological environment of some localities was eased. The gigantic "ecological project" of building shelterbelts in north, northwest, and northeast China, in particular, played a positive role in improving our region's ecological environment.

In 1989, five environmental protection research achievements of our region won the regional-level (ministerial-level) awards for scientific and technological progress, four research projects were completed and appraised, and some research projects reached the advanced levels of the country and the world.

In 1989, the environmental protection committee of the State Council commended three advanced enterprises and seven advanced workers of our region who distinguished themselves in environmental protection work. The autonomous regional people's government commended 19 advanced enterprises and 64 advanced workers throughout the region who distinguished themselves in environmental protection work.

At present, our region's environmental pollution still continues and ecological damage is still not under total control and we need to further strengthen our environmental protection work.

**Ship Inspections To Prevent Marine Pollution Noted**  
*HK1909003090 Beijing CHINA DAILY in English*  
19 Sep 90 p 3

[By staff reporter Zhang Ping]

[Text] China is taking strict measures to prevent marine pollution caused by ships calling at Chinese harbours.

Last year, antipollution inspectors boarded 5,142 vessels in order to check for oil leakages.

Lao Hui, chief of the antipollution division of the Harbour Superintendency Bureau of the Ministry of Communications, said that 317 of them were fined as a result.

He said China ranked fourth in the world in the field of vessel-boarding for examination purposes, adding that inspection measures in China were very strict.

No major pollution accidents had occurred in China's seas or harbours since last year, he said.

However, he said, a serious oil spillage occurred in 1988 off the southeast coast, when a foreign oil tanker spilled more than 270 tons of oil.

Lao, who is also a legal expert in the field of marine pollution, said Chinese vessels scheduled for overseas voyages had also been inspected.

Meanwhile, he said China belonged to almost all the international marine organizations and had signed many international treaties.

And in recent years, he said, the country had drafted and implemented a series of laws and regulations on the prevention of pollution in harbours.

At the same time, pollution inspectors had been trained for the work.

Lao said that nearly all of China's 20 major ports now had professional inspection staff equipped with advanced inspection devices.

Because of this, he said, pollution caused by ships had declined in recent years.

But the problem still existed in China's harbours, he said, and most of the pollution was caused by industrial waste water and urban sewage.

Many small ships simply neglected antipollution regulations and most of them did not possess the equipment necessary for carrying dangerous chemical materials, he said.



## LAOS

**Environment Seminar Opens in Vientiane**

*OW2509142190 Vientiane KPL in English 0924 GMT  
25 Sep 90*

[Text] Vientiane, Sept 25 (KPL)—A seminar on environment was opened here on September 24 by the Ministry of Science and Technology in collaboration with the Institute of Natural Resources and Environment. It was attended by more than 50 officials from various ministries and enterprises in Vientiane Prefecture.

The seminar is aimed at giving the participants more knowledge on environmental protection in Laos and on other important measures to be taken for the protection of environment in the future.

The seminar received a \$2,800 fund from the U.N. It will last three days.

## MONGOLIA

**Prime Minister Promises Attention to Environmental Issues**

*OW1609202090 Ulaanbaatar International Service  
in English 0910 GMT 15 Sep 90*

[Text] Mongolian Prime Minister Byambasuren is having talks with the leaders of political parties on the formation of a new government. He has reached agreements with the leaders of the National Progressive Party, and is having talks with the Democratic and Social Democratic parties. The prime minister managed to have a mutual understanding with the Mongolian Green Party, and assured of environmental protection in the structure of the future cabinet. Although the Greens failed to get any seats in the parliament, Prime Minister Byambasuren expressed his willingness to cooperate with this party within the government framework.

## INTRABLOC

### **Bulgarian President Issues Message on Romanian Pollution of Ruse**

*AU1709142990 Sofia BTA in English 1329 GMT  
17 Sep 90*

[Text] Sofia, September 17 (BTA)—President Zhelyu Zhelev has been assured by the Romanian head of state, Mr. Ion Iliescu, that Romania will do everything in her power for the quick settlement of the ecological problem of the Bulgarian town of Ruse.

The above announcement is made in President Zhelev's message addressed to the children of Ruse, who for long years have been breathing chlorine-saturated air, a "present" from the chemical works in the Romanian town of Giurgiu situated on the opposite bank of the Danube.

Today the children of Ruse began their school year with an open lesson in ecology. It took place in the central square of the Danubian town, the population of which is 200,000. It was attended by a lot of children and their parents. With black banners and posters they protested against the pollution of the air in Ruse which is defined as "ecocide" by its inhabitants.

We should not let this town whose history is 19 centuries old die, because it would be the most sinister lesson in ecology for the future inhabitants of the planet, it is said in the address sent to the presidents of Bulgaria and Romania and to the United Nations Security Council.

### **Romanian Premier Notes Bulgarian Role in Ruse-Giurgiu Pollution**

*AU1909122690 Bucharest ROMPRES in English  
1105 GMT 19 Sep 90*

["Petre Roman: The Truth About Pollution at Giurgiu"—ROMPRES headline]

[Text] Bucharest, ROMPRES, 19/9/1990—Answering a question regarding the way in which some Romanian tourists were treated in Bulgaria, who were assaulted or molested, Romanian Premier Petre Roman stated in an interview for "TINERETUL LIBER" daily: I know that, and we should take firm measures. We have here a very strange phenomenon. Maybe I should use even harder terms. The idea was accredited there that, on the one hand, the pollution of Ruse is disastrous and that, on the other hand, it is the result of the activity of the chemical plant at Giurgiu. Which is partially true. This phenomenon of unjustified and unreasonable augmentation of that idea is in fact of political nature. And it was made not to stain Romania's image but to make political pressures in Bulgaria. A joint commission of experts has been set up who visited both the chemical plant at Giurgiu and the town of Ruse. The results of the inquiry showed that there were many sources of chemical pollution in Ruse which the Bulgarian side had not eliminated

although it had pledged to do it. Our chemical plant has taken serious measures to stop the pollution sources. We agreed that international experts may be called to express their opinions. We are not afraid of it. I think that the Bulgarian side should worry about what might be discovered in Ruse. Then there is another delicate question, namely the one concerning the nuclear plant at Kozloduy, built like the one at Chernobyl without protection cap. It should be put under international fora's discussion, which the Bulgarian premier agreed because he also knows that issue very well.

### **Bulgarian City 'Gassed Again' by Romanian Plant**

*AU2109193590 Sofia BTA in English 1913 GMT  
21 Sep 90*

["Ruse Gassed Again"—BTA headline]

[Text] Sofia, September 21 (BTA)—Ruse has been gaspoisoned again with the well-known organic substances. According to information received from its citizens and the competent authorities, the thick suffocating cloud came from the north-northeast and densely covered the central and riverside parts of the city. The gassing began at about 0100 hrs. at night, as a result of which many people coughed, got headaches and felt sick—something usual in such cases.

The source of the pollution is the production of Vulcatis [as received] in the chemical works in the Romanian town of Giurgiu.

### **Bulgarian Doctors in Silistra Protest Pollution From Romania**

*AU2209153290 Sofia BTA in English 2109 GMT  
21 Sep 90*

[Text] Sofia, September 21 (BTA)—The members of the Bulgarian Union of Physicians in the Danubian town of Silistra back up the protests against the transboundary air pollution, the source of which are the metallurgical works in Calarasi. In an address of the union it is pointed out that "the sulphur dioxide and hydrogen sulphide concentration measured exceeds the acceptable limits three times." The physicians qualify the pollution as an outrage against the cleanness of the air in Silistra which is "contrary to the generally adopted international standards, good-neighbourly relations and the basic principles in the Helsinki Act."

It is insisted that the municipal people's council should take most urgent action with the Romanian state authorities in Calarasi and should officially ask the Bulgarian Government to include the problem of the transboundary pollution of Silistra in the bilateral negotiations.

**Bulgaria's Prime Minister 'Worried' About Relations With Romania***AU2309155390 Sofia BTA in English 1520 GMT  
23 Sep 90*

[Text] Sofia, September 23 (BTA)—Prime Minister Andrey Lukanov is worried by the polemics launched in the last days by the Romanian and the Bulgarian press, abundant in mutual attacks and accusations.

In an interview on the Bulgarian Radio today Mr. Lukanov stated that he would ask for an urgent meeting with his Romanian counterpart, Mr. Petre Roman.

"We should not allow such a deterioration of our relations, which would block the possibilities for finding a solution to the problems both countries have with the conservation of the environment and the struggle against transboundary smuggling," Mr. Lukanov stated.

In the last days representatives of the two countries' customs authorities have been exchanging attacks in Romanian and Bulgarian papers. The cause for the attacks is the large groups of smugglers who are creating serious difficulties at the checkpoint on the bridge spanning the Danube at Ruse. In the meantime the chemical works in the Romanian city of Giurgiu on the opposite bank of the Danube continue to dangerously contaminate the air blown by the wind in the direction of Ruse. Information for similar pollutions, the source of which is also a Romanian works, have come from another Bulgarian town situated on the Danube—Silistra. The joint commission of experts failed to reach an agreement as to the sources of the pollution which has been going on for almost ten years now. The meeting Premier Lukanov had with Romanian Prime Minister Petre Roman three months ago did not help improve the situation.

**Romanian Views on Transborder Pollution Criticized***AU2409100190 Sofia DUMA in Bulgarian 19 Sep 90  
p 3*

[Text] Bucharest, 18 September (BTA correspondent Petyo Petkov)—After ten years of silence, the Romanian press has at last broken the taboo imposed by Nicolae Ceausescu, and in its own way has "discovered" the topic of the Ruse-Giurgiu ecological tragedy. Thanks to a number of reports and articles in various mass media, the thousands of Romanians who daily cross the Danube bridges at Ruse have their attention drawn to the smokestacks of the Ruse plants and factories. They pause in the hope of identifying the five unfortunate plants which are alleged to poison the air of Giurgiu.

A great ecological mystification has been concocted, and its authors can be satisfied with its success. Almost a year after Ceausescu's overthrow, our neighbors are convinced more than ever that the Giurgiu Chemical Combine, built at the suggestion of Ceausescu's wife, is ecologically pure, while the Bulgarians are capricious and technically illiterate people, who should erect a

memorial to the ultracompetent Romanian chemists who pointed out to them the true reasons for the ecological tragedy. Regarding the chemical combine, the Romanian newspapers either say nothing or, at best, speak in undertones and in the conditional mood.

In fact, to date no document exists in which the Romanian side has agreed that the chlorine "cocktails" have come and continue to come from Giurgiu. It is not hard to guess that the failure to recognize this arises from fears that the combine will be forced to pay compensation to the thousands of victims who have suffered, not only on our side of the river, but also on the Romanian bank. Such cases are already known in world experience.

However, certain more efficient Romanian journalists have not been satisfied merely with misrepresenting the truth about Ruse, but have started a crusade against the Kozloduy Nuclear Power Plant: "Fishing is banned in Bechet (a village opposite Kozloduy)! A secret document prohibits the villagers from selling lettuce, tomatoes, melons, and so on to hospitals, creches, and kindergartens! The fish are radioactive, and fruit and vegetables contain radioactivity above the permitted levels! The Bulgarian nuclear power plants at Kozloduy and Belene (!!) have poisoned the Danube and our environment...."

These lines come from an article in the latest issue of the popular weekly VIATA CAPITALEI ("The Capital's Life"), carrying the signature of Dan Fruntelata, the popular publicist of the recent past. After authoritatively explaining to his readers that the Bulgarian insurgents against the Ottoman yoke were "terrorists who instilled terror along the Danube," he describes in the same terms the people who are now campaigning for the purity of the air over Ruse. In order that his readers should harbor no doubt about the author's good feelings toward our country, the article concludes with the words: "We have always, or nearly always, got on well with our neighbors. Let us not act like great powers toward one another!"

**Bulgarian, Romanian Experts Differ on Causes of Ruse Pollution***AU2709130990 Sofia BTA in English 1132 GMT  
26 Sep 90*

[“Chemical Warfare’ Against Ruse Continues”—BTA headline]

[Text] Sofia, September 27 (BTA)—In an analytical release on the ecological problems of Ruse, DUMA likens the Danubian town to a testing chemical ground subjected to continuously increased "gas attacks" from the opposite bank of the Danube.

After the chlorine production in the chemical works at Giurgiu was stopped, the chlorine gassing of Ruse sharply dropped, but its air is still polluted by other harmful substances emitted by the production of vulkacits [as received]—the basic raw material for the rubber industry.

There is a difference of opinion in the report of the Bulgarian and the Romanian experts who carried out an inspection. According to the Bulgarians, the vulkacit installations are rust-stained and should be replaced. According to the Romanians, the emission of harmful substances will be reduced to a minimum by mounting a purifier.

But it is not specified when the purifier will be installed. According to the paper, the international experts' report, which is expected to be made about the Ruse-Giurgiu problem, will be of great importance for the final settlement of the argument.

In the meantime the respiratory system diseases among the 200,000 inhabitants of the Danubian town of Ruse are increasing. Lung cancer cases have grown by about 20 percent and lacteal gland cancer cases in women by about 60 percent.

## CZECHOSLOVAKIA

### Minister Vavrousek on Safety at Bohunice Power Station

AU2709070690 Prague *LIDOVA DEMOKRACIE*  
in Czech 24 Sep 90 p 1

["kz"-signed article: "How Long Will It Last?"]

[Excerpts] A few days ago the Federal Government discussed a preliminary report of the commission of experts set up to consider the safety of our oldest light-water nuclear power station—the V 1 at Jaslovske Bohunice. The conclusions drawn by the experts thus far demonstrate that, although its operation is connected with greater risk, though its customary elsewhere in the world, the danger of an accident definitely does not exceed tolerable limits. [passage omitted]

We learned from Environment Minister J. Vavrousek by what sort of shortcomings our oldest nuclear power station—which has been working in a highly reliable way, with a minimum of malfunctions, all of them common, since the late seventies—is beset. He said that the concept of this power-generating source is based on a philosophy which does not foresee the eventuality of the greatest possible accident, which we understand to mean, in line with current world practices, the complete interruption of the primary circuit. Another fault of the power station lies in the fact that, from the viewpoint of seismicity, it is built in the second least suitable location in Czechoslovakia. An even greater danger [of an earthquake] could be expected only in the Komarno area. On the other hand we know, however, that an earthquake in this locality can reach a maximum of the seventh degree on the international scale, which would still be sustainable for this building project. There are also complications with the two reactor vessels. They were made from improper material, material which contains some additives that make it more susceptible to being overstrained.

The crystalline lattice of the atoms of iron greatly disrupts the flow of neutrons. It is obvious from this that the service life of the reactors will definitely be shorter than the projected 25 to 30 years. But how much longer will the reactors be able to work without any serious risks?

It is evident that, in view of the limited availability of domestic fuel and power resources and of an environment disrupted by coal-burning power stations, Czechoslovakia will not be able to do without nuclear power in the foreseeable future. The cutbacks in supplies of Soviet crude oil and the present situation in the Persian Gulf are bound to even intensify our present energy problems. This is why putting the V 1 nuclear power station at Jaslovske Bohunice out of operation would be unacceptable. Let us therefore hope that this source of energy will last for some more time. Yet this should definitely not be at the expense of the safety of our population and that of the neighboring countries.

### Officials Inspect Mochovce Nuclear Power Plant Site

AU1609201590 Bratislava *NARODNA OBRODA*  
in Slovak 10 Sep 90 p 2

[Alexander Szabo report: "All Clear in Mochovce"]

[Text] Mochovce—Vladimir Dlouhy, CSFR minister, accompanied by Jan Jicha, CSFR deputy minister of the economy, and Stefan Petras, Slovak deputy minister of the economy, visited the Mochovce Nuclear Power Plant on Saturday [8 September]. He was briefed on the state of the power plant's construction, on the problems in financing this extraordinarily demanding project, and on the replacement of the unreliable DERIS [expansion unknown] automated system for controlling the technological processes.

Minister Vladimir Dlouhy toured the site of the nuclear power plant's first block and the storage dump for radioactive waste. At a meeting with journalists he said that the Federal Ministry of Finance will provide a guarantee of credit for the further construction of the nuclear power plant in Mochovce. Before 20 September it will be necessary to make a definitive decision on the foreign supplier of an automated control system and it will be necessary to conclude a contract before the end of the month so that the first block of the nuclear power plant in Mochovce can be brought into production in 1993.

### Subsidies Available for Organic Farming

AU1909102390 Prague *HOSPODARSKE NOVINY*  
in Czech 12 Sep 90 p 1

["(ru)"-signed report: A Chance for Private Farmers"]

[Text] There are quite favorable conditions for the development of organic farming [alternativni zemedelstvi] in our republic, if only because of the fact that 20 percent of total agricultural land is in conservation areas,

that is, in areas with a special agricultural regime. This is very close to the goals of organic farming, which aims at the production of healthy food while respecting the balance of the entire ecological system. This was said by Eng. Richard J. Barak, Czech Republic deputy minister, at a news conference in Prague yesterday.

A total of six existing associations in the Czech Lands alone indicates the interest in the production of biological food and in organic farming in Czechoslovakia. Organic farming, which is practised in foreign countries on small farms—from 10 to 100 hectares—represents a great hope, especially for private farmers. These hopes are even increased due to the existence of the subsidies fund. Within the framework of this fund, the Ministry of Agriculture can release financing worth 25 million korunas. In order to apply ecological methods in the rearing of animals and cultivation of crops, farmers who farm organically can acquire, in the transitional preparatory period prior to the real production of biological food, subsidies worth up to 3,515 korunas per hectare. The subsidy must be claimed through the associations or unions of alternative farmers.

## HUNGARY

### Mercury Contamination at Borsod Chemical Combine Alleged

25000788B Budapest NEPSZABADSAG in Hungarian  
22 Aug 90 p 10

[MTI Report: "Environmentalists versus Borsod Chemical Combine: Mercury Contamination, Accusation and Denial"]

[Text] On Tuesday the Miskolc group of the Hungarian Green Party and the Green Action Association forwarded a news release to several press organs. They accused the Borsod Chemical Combine [BVK] claiming that it perpetrates the largest environmental pollution in Hungary of all times: A large quantity of metal mercury was lost in the factory and this endangers the environment.

The BVK uses mercury in the course of preparing its various chemical products in the barium chlorate and muriatic acid plants. A rather large volume, estimated to amount to between 500 and 1,000 tons disappeared, according to the environmentalists. They demand an immediate halt to the environmental pollution, the closing down of the plant, and that persons responsible be held to account.

The MTI reporter reached BVK Incorporated Chairman and President Lajos Tolnai by telephone on Tuesday afternoon. He had this to say:

"This mercury may be found within our factory premises, it did not leave the factory, it is not polluting either the River Sajo or the environment to the extent stated. According to our measurements one finds under

the factory between 300 and 500 tons of mercury, no more. Below this mercury there is a sealing layer in the ground which prevents the damaging escape of mercury. In any event, the most important thing for us to do is to protect our workers and the environment against the damaging effects of mercury. We could not have polluted the Sajo because according to examinations made by outside professionals more mercury can be found in the upper regions of the river than in its down flow segment adjacent to the BVK. This statement is also supported by rather accurate environmental protection tests. In the recent past we reached an agreement with Environmental Protection Deputy State Secretary Zoltan Illes to the effect that we will discontinue using this dangerous chemical as soon as possible, to our mutual satisfaction, following thorough examinations to clarify this matter."

In his further remarks the president said that they have reached an agreement with the American Martech firm in regard to discontinuing the use of this harmful product. This firm also agreed to cease the environmental harm done around the abandoned Soviet barracks in Hungary. The ground below the BVK will be cleaned of mercury by using the most up-to-date technological processes.

## POLAND

### Minimum Standards Set for Water for Drinking, Industrial Uses

90WN0243A Warsaw DZIENNIK USTAW in Polish  
No 35, 31 May 90 item 205, pp 479-480

[Executive Order of the Minister of Health and Social Welfare dated 4 May 1990 changing the executive order governing the conditions which water for drinking and industrial uses should meet]

[Text] Pursuant to Article 106, Paragraph 2 of the law dated 24 October 1974—Water Law (DZIENNIK USTAW No. 38, item 230; 1980, No. 3, item 6; 1983, No. 44, item 201; 1989, No. 26, item 139 and No. 35, item 192, as well as 1990, No. 34, item 198) the following is decreed:

Paragraph 1. The executive order of the minister of health and social welfare dated 31 May 1977 on conditions which water for drinking and industrial uses should meet (DZIENNIK USTAW, No. 18, item 72) is amended as follows:

1) Paragraph 3 is amended to read:

"Paragraph 3.1. From the organoleptic and physical-chemical point of view, water should specifically meet the conditions set forth in Annex No. 1 to the executive order, and from the bacteriological point of view, those set forth in Annex No. 2.

3.2. "The content of radioactive substances in the water may not exceed the values of concentration of these substances set forth in other regulations."

2) Paragraphs 4 and 5 are deleted.

Paragraph 2. The executive order takes effect after 14 days have passed since the day of publication.

3) an annex to the executive order is replaced with Annexes No. 1 and No. 2 in the form given in Annexes No. 1 and No. 2 to the present executive order.

[signed] Minister of Health and Social Welfare: A. Kosiniak-Kamysz

Annex No. 1 to the executive order of the minister of health and social welfare dated 4 May 1990 (item 205)

**Organoleptic, Physical, and Chemical Conditions Which Water for Drinking and Industrial Uses Should Meet**

Item	Indicator, Name of Compound	Unit of Measurement	Highest Permissible Content or Range	Notes
1	2	3	4	5
	<b>Organoleptic</b>			
1	Color (Pt)	mg/cubic dm	20	
2	Reaction (pH)	-	6.5-8.5	
3	Turbidity	mg/cubic dm	5	
4	Dissolved compounds	mg/cubic dm	800	
5	Hydrogen Sulfide	-	Imperceptible smell	
6	Hardness (CaCO <sub>3</sub> )	mg/cubic dm	500	
7	Smell	-	3—Natural permissible smell of chlorine during disinfection by chlorine, not burdensome	
8	Suspensions, dead and live water organisms, oil stains, etc.		Invisible in glass vessels	
	<b>Physical and Chemical</b>			
1	Ammonia (N)	mg/cubic dm	0.5	
2	Arsenic (As)	mg/cubic dm	0.05	
3	Nitrates (N)	mg/cubic dm	10.0	
4	Benzene	mg/cubic dm	0.01	
5	Benzoperene	mg/cubic dm	15.0	
6	Chloramines	mg/cubic dm	2.0	
7	Chlorides (Cl)	mg/cubic dm	300.0	
8	Chlorobenzenes (without hexachlorobenzene)	mg/cubic dm	0.005	
9	Chlorophenols (without pentachlorophenol)	-	Smell imperceptible	
10	Chloroform	mg/cubic dm	0.03	
11	Available chlorine (Cl <sub>2</sub> )	mg/cubic dm	0.2-0.5	in water supplied to the mains
			0.05 or more	at the terminals of the mains
12	Useful chlorine in the water of a swimming pool	mg/cubic dm	no less than 0.2	at the drain
13	Chromium (Cr <sup>6+</sup> )	mg/cubic dm	0.01	
14	Free cyanides (CN)	mg/cubic dm	0.02	
15	Zinc (Zn)	mg/cubic dm	5.0	
16	Anionic detergents	mg/cubic dm	0.2	
	Cationic detergents	mg/cubic dm	0.1	
	Non-ion detergents	mg/cubic dm	0.2	
17	2,4-D (dichlorophenoxyacetic acid)	mg/cubic dm	0.05	
18	DDT and its metabolites	mg/cubic dm	0.001	

**Organoleptic, Physical, and Chemical Conditions Which Water for Drinking and Industrial Uses Should Meet  
(Continued)**

Item	Indicator, Name of Compound	Unit of Measurement	Highest Permissible Content or Range	Notes
1	2	3	4	5
19	1,2-dichloroethane	mg/cubic dm	0.01	
20	1,1 dichloroethene	mg/cubic dm	0.001	
21	Phenols	-	imperceptible smell	
22	Fluorides (F)	mg/cubic dm	1.5 no less than 0.3 recommended	
23	Formaldehyde	mg/cubic dm	0.05	
24	Aluminum	mg/cubic dm	0.3	
25	Heptachloride and its epoxide	mg/cubic dm	0.0001	
26	Heptachlorobenzene	mg/cubic dm	15.0	
27	Cadmium	mg/cubic dm	0.005	
28	(Lindane)(HCH gamma)	mg/cubic dm	0.005	
29	Manganese (Mn)	mg/cubic dm	0.1	
30	Methoxychlor	mg/cubic dm	0.03	
31	Copper (Cu)	mg/cubic dm	0.05	
32	Nickel (Ni)	mg/cubic dm	0.03	
33	Lead (Pb)	mg/cubic dm	0.05	
34	Pentachlorophenol	mg/cubic dm	0.01	
35	Mercury (Hg)	mg/cubic dm	0.001	
36	Selenium (Se)	mg/cubic dm	0.01	
37	Sulfates (SO <sub>4</sub> )	mg/cubic dm	200.0	
38	Sodium (Na)	mg/cubic dm	200.0	
39	Silver (Ag)	mg/cubic dm	0.05	
40	Carbon tetrachloride	mg/cubic dm	0.005	
41	Carbon tetrachloroethene	mg/cubic dm	0.01	
42	Trichloroethene	mg/cubic dm	0.03	
43	Iron (Fe)	mg/cubic dm	0.5	

**Annex No. 2 to the executive order of the minister of health and social welfare dated 4 May 1990 (item 205)**

**Bacteriological Conditions Which Water for Drinking and Industrial Uses Should Meet**

Water Quality Indicator	Water From Water Supply Systems (public or enterprise), Disinfected		Water From Water Supply Systems (public or enterprise), Not Disinfected		Water From Local Water Supply Systems, Public Wells, and Enterprise Wells	Water From Equipment for Personal Needs	Water flowing into a swimming pool	Water in a swimming pool and drain water
	Supplied to the mains	In the mains	Supplied to the mains	In the mains				
1	2	3	4	5	6	7	8	9
Number of fecal-type bacteria of the coli group in 100 ml of water not to exceed	0	0	0	0	0	x	0	0

**Bacteriological Conditions Which Water for Drinking and Industrial Uses Should Meet (Continued)**

Water Quality Indicator	Water From Water Supply Systems (public or enterprise), Disinfected		Water From Water Supply Systems (public or enterprise), Not Disinfected		Water From Local Water Supply Systems, Public Wells, and Enterprise Wells	Water From Equipment for Personal Needs	Water flowing into a swimming pool	Water in a swimming pool and drain water
	Supplied to the mains	In the mains	Supplied to the mains	In the mains				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
Number of bacteria of the coli group in 100 ml of water not to exceed	0	1	1	2	2	10	2	5
Number of the colonies of bacteria on nutritive agar after 24 hours, at 37° Centigrade, in 1 ml of water not to exceed	10	20	20	40	40	100	100	200
Number of the colonies of bacteria on nutritive agar after 72 hours, at 20° Centigrade, in 1 ml of water not to exceed	50	100	100	200	x	x	x	x
Number of staphylococci in 100 ml of water not to exceed	x	x	x	x	x	x	2	5

Water for filling the tanks of passenger transportation vehicles should meet the requirements set forth in rubric 3.

Water from malfunctioning equipment should at the very least meet the requirements set forth in rubric 6.

**Catastrophic Impact of Pollution on Health in Katowice**

90WN0243B Warsaw TRYBUNA in Polish 26 Jun 90  
p 3

[Article by Krystyna Panek: "Does Silesia Stand a Chance?"]

[Text] Brown smoke billowing from the chimneys of about 4,555 enterprises in Silesia poison more than just the environment. Particulate emissions, sulfur dioxide, benzoaperenes, and heavy metals in concentrations exceeding the norms by factors of thousands are taken in by the people, together with the contaminated air, water, and foodstuffs. They are a tremendous influence on the health of the population of Silesia.

Despite the fact that comprehensive studies of the influence of industrial pollution on the status of the populace are not conducted, contrary to the requests of the local community, the analysis of routine, regular statistics reveals a very worrisome picture. A report prepared by the Katowice Medical-Epidemiological Service for a meeting of the Sejm Commission for Health suggests that the standardized death rate coefficients for men aged 45 to 64 collected between 1985 and 1987 alone make it possible to classify Katowice Voivodship as one of the four voivodships with the highest death rates in the country.

It is no accident that areas of Katowice Voivodship in which industries most detrimental to the environment are concentrated top the black list, for example, Pszczyna, Zory, Tychy, Czeladz, Pyskowice, Gliwice, Knurow, Rybnik, and Mikolow.

The state of an ecological disaster also affects the health of children who are born here. The data of Professor R. Osuch-Jaczevska suggest that the highest percentage of premature births and the birth of fetuses incapable of survival occurs in Katowice Voivodship. The incidence of miscarriages is also greater here. Excessive quantities of heavy metals have been found in the placentas of the women of this area.

An examination of 12,000 children of preschool age has shown that, depending on the place of residence, elevated levels of lead content in blood were found in 16 to 50 percent of the children examined.

The dramatic picture of the health status of the residents of Silesia is complemented by the data of Dr. Stanislaw Majewski from the Oncology Institute in Gliwice, according to which the incidence of lung and breast tumors among the men and women of the region has increased alarmingly.

However, the greatest danger is posed by genetic changes in people residing in contaminated areas, which are revealed by the team of Professor Mieczyslaw Chorazy



from the Center for Mutations and Cancer of Environmental Origin in Gliwice. These changes are very alarming because they pose a tremendous danger to the biological existence of future generations in Katowice Voivodship.

The ecological disaster in Silesia as seen in terms of the illnesses and dramas of the people who happen to live there, rather than environmental pollution, is shocking. It calls for immediate actions to be undertaken. First of all, it is necessary to help the sick by, among other things, greater investment in communal health services. Specialized clinics are also necessary in Silesia to study the pathological phenomena of pregnancy, as well as an increase in the number of hospital beds in oncology wards. Improving the condition of the environment in Katowice Voivodship is extremely important. This is primarily the task of the industry of Silesia and local authorities. However, this effort should not be made by Katowice Voivodship alone. An improvement in the living conditions of the residents of this region should gain the support of the entire country.

## ROMANIA

### Tirnaveni Chemical Plant Explosion Kills Five

*AU2409144690 Bucharest Domestic Service in Romanian 0800 GMT 24 Sep 90*

[Text] This morning, at around 0700 [0400 GMT], an explosion took place at the No 5 calcium carbide kiln of the Tirnaveni [Mures County] Chemical Combine. According to the first information that we received from the technical director of the combine, the worn out mechanical and electrical equipment and the molten mass which was thrown out from the exploded kiln prevented the proper ventilation of gas. As a result of the explosion, fire also broke out in the respective area but it was brought under control.

As Stefan Neagu, reporter of the territorial Tirgu Mures radio station, informed us, up to this hour he learned that 5 people were killed by the explosion and 10 workers

were hospitalized, 2 of them in serious condition with second and third grade burns.

[Bucharest Domestic Service in Romanian at 1000 GMT on 24 September, in a similar report adds the following: "the explosion caused great material damage and the technological process had to be stopped for a long period. After the fire—which broke out after the explosion—was brought under control, the team of expert physicians from Tirnaveni Hospital and from the Tirgu Mures Medical and University Center started to make efforts to save the lives of the injured persons and succeeded in reducing the number of the hospitalized from 10 to 6 people. Likewise, collectives of technical experts are attempting to estimate the damage and are drafting a number of measures in order to ensure a speedy resumption of work of the whole technological installation at the No 5 calcium carbide kiln at the Tirnaveni Chemical platform. Concurrently, a thorough investigation is being carried out to find out the causes which led to the explosion.]

### IAEA Team To Examine Cernavoda Nuclear Power Plant

*AU2409185490 Bucharest ROMPRES in English 1832 GMT 24 Sep 90*

[Text] Bucharest, ROMPRES, 24/09/1990—Following a request made by the Romanian Government in February 1990, an international team from the International Atomic Energy Agency (IAEA) consisting of experts in nuclear safety, also known by the name of operational safety review team—OSART, will perform a preoperational safety review of the Cernavoda Nuclear Plant over September 24-October 12, 1990. It is the first OSART mission in Romania.

The review will comprise two steps: one in 1990 on building aspects and another in 1991, on the preparations for putting it into operation. The IAEA also recommends a second similar mission to take place about one year before estimated date of plant commissioning.

The OSART team at Cernavoda includes, besides IAEA members, a number of experts appointed by the governments of Canada, France, Spain, Great Britain and the United States, plus an observer from Pakistan.

## BRAZIL

### Government Bans Exploitation of Atlantic Coast Forest

*PY2209013090 Brasilia Domestic Service in Portuguese  
2200 GMT 21 Sep 90*

[Text] The government has banned the exploitation of the Atlantic coast forest. President Fernando Collor today planted a Pau Brasil tree in one of the Planalto Palace lawns and issued several ecological resolutions, among them one that bans the exploitation of the Atlantic coast forest.

During the ceremony, Secretary of the Environment Jose Lutzenberger emphasized the importance of the resolution.

[Begin Lutzenberger recording] We do not need to touch the last forests that we have. We have a fantastic task ahead of us, a task which will enthuse our youth. We will develop the areas that have already been cleared of forests with an effort that will receive the appropriate support. This is what this government intends to do, and this is how Brazil will look on the world map. [end recording]

Lutzenberger said that even though the Atlantic coast forest is now only three percent of what it was in the past, it is still being devastated in Santa Catarina, Sao Paulo, and Rio Grande do Sul. This is why the Environment Secretariat proposed to suspend until further notice the exploitation of the Atlantic coast forest. The president approved the secretariat's proposal.

### Government Signs Atlantic Forest Preservation Decree

*PY2709122590 Brasilia Domestic Service in Portuguese  
2200 GMT 26 Sep 90*

[Report by Flavio Damaceno from Brasilia]

[Text] As of today it is forbidden to cut down any tree or to commercially exploit any native plant species of the Atlantic forest.

The decree, which was signed by acting President Itamar Franco, was published today in the official gazette. The Atlantic forest is considered to be the tropical forest most threatened with extinction in the world and the most threatened ecosystem in Brazil. According to the decree, the IBAMA [Brazilian Institute for the Environment] is now in charge of closely supervising any project implemented in the area.

The Atlantic forest covers parts of the states of Bahia, Espirito Santo, Minas Gerais, Rio de Janeiro, Sao Paulo, Parana, Santa Catarina, and Rio Grande do Sul.

Jose Pedro de Oliveira Costa, coordinator of the Atlantic forest consortium, commented on the importance of the decree:

[Begin Oliveira Costa recording] This is the most important decree signed by the Collor administration, because

it ensures the preservation of the Atlantic forest. This decree means that permits to cut trees in the primary or secondary forests of the Atlantic forest will no longer be granted. This is a great achievement which complies with the terms of the Brazilian Constitution, which establishes the Atlantic forest as a national reservation. [end recording]

When Brazil was discovered, the Atlantic forest covered 12 percent of the country's territory. It now covers less than 0.6 percent, equivalent to three times the territory of Sergipe State.

### Traits, Views of Environment Secretary Defined

*90SM0267A Sao Paulo ISTOE in Portuguese 29 Aug 90  
pp 38-40*

[Article by Ilara Viotti]

[Text] One of the best-known Brazilian ecologists, Jose Lutzenberger, national secretary of the environment, departed on Wednesday, 22 August for Nairobi, Kenya to attend, along with other world authorities on the subject, a preparatory meeting for the Second United Nations Conference on "Environment and Development," to be held in Rio de Janeiro in 1992. A week earlier, Lutzenberger could be seen near his official residence in the Brasilia National Park, scolding two workers who were searching for a dog. "Leave the dog alone," ordered the irate Lutzenberger. The two young men disappeared into the woods without having a chance to explain to the boss that the dog, like others from the neighborhood, kept coming into the park to feast on the local wildlife.

Ever since he arrived at the first echelon of the Collor administration, Jose Lutzenberger, 63, has been hard-pressed to maintain the bureaucratic routines associated with that kind of power. For example, he detests signing the dozens of documents the ministry produces. "Normally, he hands that task over to his deputy," an adviser reveals. He also becomes irritated when besieged by the press or people who just want to meet him. "No one wants to talk with my advisers, only with me, even when the matter is not important. I cannot get any work done that way," he complains. In contrast to his colleagues on the top echelon who do fulfill the routine tasks associated with their position—some with undisguised pleasure—Lutzenberger hates anything that reeks of bureaucracy.

In his first month in Brasilia, while living in a room in the Eron Hotel, he anguished over the prospect of having to occupy one of the immense, but barren, official apartments in the city's finest buildings. "He was extremely restless," relates his daughter, Lara, 20, a future biologist and his father's adviser.

He escaped from his distress during a Sunday walk at the end of March, when he discovered "a ridiculous, run-down" house, as he himself described it, situated in the middle of 33,000 hectares of the city park. The house

contains almost no furniture, as befits the austere lifestyle of its occupant. But it is surrounded by woods: "It is just the right house for him," says his daughter. Since then, Lutzenberger has been thinking up projects for the grounds of the residence. Daily cleaning of the stone-lined swimming pool, which is fed by the region's highly pure mineral water, was suspended on his orders: "I am going to build a little ecosystem here," he says. "After two days of not being cleaned, it already has some mud," he commented. In buckets near the pool, plants patiently gathered by the secretary along the streams in the park are still waiting to become part of the little ecosystem. Some of them, like the floating "pistia" or the water lettuce, came from Rio Grande do Sul. From the Botanical Garden in Rio de Janeiro, Lutzenberger ordered a specimen of Chinese lotus: "It might look pretty in the middle of the pool," he suggested. The secretary has still not decided what kind of fish to put in with the plants. "Not those little red ones," he said, disparagingly. "The simpler and more natural, the better."

To the despair of park employees, Lutzenberger has turned their daily routine upside down. As soon as he arrived, he declared war against removing the dry leaves from the ground. At this time of the year, Brasilia is covered with dry leaves. They used to be swept up and thrown away, which is "absurd" in the eyes of the ecologist: "The decomposition of the dry leaves protects the soil and gives it new fertilizer," he teaches the local gardeners, who are accustomed to absolute cleanliness. Lutzenberger's mornings have been spent reading, making a few technical decisions, and visiting the savannahs. "Everyone is worried about the Amazon region, but the savannahs also need to be preserved," he notes.

Coat-and-tie occasions have been reduced to the absolute minimum. Lutzenberger is still irritated by the daily life of a high government official. Contacts with the press are particularly annoying to him. Sought out at home by ISTOE SENHOR, he at first reacted impatiently: "But I came out here to be left alone, I cannot work this way." The secretary laments the absence of privacy: "If I had privacy, I could even take a sunbath." He wanted to know what the press wants with him, but he hastens to come up with his one theory: "I know, I know—no one wants to hear about the technical things, all you are interested in is Zelia's romances." His daughter, Lara, explains that "My father's resistance to dealing with people comes from his need to devote himself more and more to his work. Ever since the 1970's, when he became well-known, it has been very hard to maintain a schedule without constant, time-consuming, interruptions," notes the daughter-adviser.

The Brasilia press is especially bothersome to the environment secretary. His first unpleasant experience came at the end of March. "We exchanged a few sentences in German during a press conference, and this seems to have offended some journalists," Lara recalls. "We always speak German at home; it was the clever way my father devised to make us grow up bilingual." Since then, Lutzenberger has preferred to talk to the foreign press.

Temperamental, the secretary escapes annoyances by shutting himself up at home or taking walks on the savannahs during his few free hours, but confesses that his mission in the government is not an easy one: "I cannot get work done, it has been very stressful, and I have had nightmares," he complains. Some benefits, however, offer consolation. Of the dozens of letters he receives from all over the world, some of them, like the ones from England's Prince Charles, are special to him. He usually recounts his ecological experiences in long letters. "Sometimes the prince writes just to say that he found a species of ant somewhere in England," an adviser said.

Lutzenberger travels to Porto Alegre less often than he would like. "When he gets there, the first thing he does is to find out how his collection of cactus and bromelia is doing," says his daughter. "He wants to see that none has died, and that they are well taken care of." The collection in his home gets no more attention from the secretary than any other plant he happens to sight. On the first of his incursions into the gardens at the Secretariat of the Environment, early in March, Lutzenberger rescued some little eggplant seedlings from the hands of a gardener who was using the pesticide Diazenon on them. "The secretary took the bag of pesticide out of my helper's hands, put it in his pocket, and took it away," reports "mister" Francisco Miguel de Freitas, gardener at Ibama/Sema for eight years now. "No sooner said than done. Now I use only powdered rope tobacco dissolved in water." Every week the secretary makes a sort of inspection tour around the gardens cared for by "mister" Francisco, recommends alternative methods, and monitors the use of chemical products on the soil. "Demanding, a stickler for detail, and temperamental," are some of the adjectives used by his closest advisers to describe the secretary. But it is also common to hear more complimentary phrases such as, "He's a genius, he's very able, and he's a dear."

When not prevented by the obligations of his position, Lutzenberger is a keen observer of nature, for which he has traces of affection. Last month he produced a long article on Gaia, a foundation of which he is a member. Its premise is that the Earth, all of it, is a single living being. The article, published in REVISTA FLOR-ESTAL, contains technical observations, scientific reasoning to support the idea, and an infinity of numbers and descriptions of chemical processes. On explaining the mechanism by which plants and animals cooperate, the secretary could not help coming out with: "The seed of a little figgie germinates only after passing through the stomach of some bird."

That is the way Lutzenberger is. The seed is not a fig seed, it is a figgie seed. He has no burning ambitions and admits that because of the workload, being national secretary of the environment gives him nightmares. He regrets not having enough privacy for a sunbath and is capable of spending several minutes thinking out loud how to reproduce the conditions of nature in his little ecosystem. In his office, in that ridiculous and nearly

empty house—"I do not have time to be there"—the greenery is beyond the walls, unconfined to vases, the way he likes it. To those who bother him, he customarily shows an expressionless face, an appearance of great haste, and leaves a clear impression that he wants to get away as soon as possible. And so he is once again free to go out on the savannahs, where he does not hesitate to pick up off the ground a plastic container that some ill-advised tourist dropped in the woods, saying to himself: "You must not leave trash in a park like this. People have to learn that."

[Box, p 39]

#### Spokesman for Nature

Respected worldwide for his opinions and respect for life and for nature, Jose Lutzenberger is always thinking out loud. Never reluctant to call a spade a spade, he surprises the unwary by the tone he uses. He talks softly but, with expansive gestures, conveys his message incisively. Here are some of the ideas and opinions he has expressed since he became part of the administration.

- Life: "I am coming to the conclusion that people prefer commercial things over natural ones."
- Government: "I could not refuse to become part of the government after having preached for so long about the need for some government action in the defense of nature."
- Pesticides: "Modern agronomy would not be using all these poisons if it had not forgotten that disease attacks only the sick, imbalanced, and poorly adjusted hosts. Parasitic organisms are yet another hurdle in the natural selection process."
- Science: "When I look at the work of molecular biologists, who are delving further and further into the dance of the macro-molecules, genes, and chromosomes without paying attention to the organism as a whole, it makes me think of someone who, wanting to get to know and understand the magnificent European railroad system, limits himself to studying, through a microscope, the letters on the timetables in those thick schedule books."
- Research: "When NASA was building the first unmanned spacecraft that would land on Mars, it could have saved all the money it spent on automatic devices that collected and analyzed the soil of that planet to see if it contained some form of microlife, even if more simpler than the simplest of our bacteria."
- Naturalists: "There are plenty of biologists, but it gets harder and harder to find naturalists. The naturalist seeks integration, harmony, preservation, perfection, aesthetic contemplation. He is on the same plane as the artist, the composer, the orchestra conductor, and the sculptor, but he works within the scientific field, in a pure dialogue with nature."

- The Earth: "The planet Earth is a living being, a living entity with its own identity, and the only one of its species that we know of."

#### Navy Seeking Dump Site for Submarine Nuclear Waste

PY1709182090 Brasilia Radio Nacional da Amazonia Network in Portuguese 1000 GMT 17 Sep 90

[Text] The Navy intends to select an island in the Brazilian littoral to store radioactive waste produced by nuclear submarines.

The site has not yet been determined, but it will be determined as soon as the country's submarine fleet begins to increase, something which, at the latest, should take place by the end of this decade.

This information was released by Rear Admiral Othon Luiz Pinheiro da Silva, chairman of the Navy Special Projects Coordinating Board [Coordenadoria de Projetos Especiais da Marinha].

### DOMINICAN REPUBLIC

#### Irrigation Reservoirs Near Crisis Levels

90WN0288A Santo Domingo EL SIGLO in Spanish 31 Aug 90 p 1-D

[Text] La Vega—At a meeting held here the director of the National Institute of Water Resources (INDRHI) reported that, because of the intense drought, the reservoirs of the country's main dams have declined between 12 and 90.6 cubic meters. He announced the possibility of an order to close the Rincon dam.

The low water production affects a total of 3.2 million tareas of land cultivated under irrigation.

Engineer Rodriguez del Gallart, through the agency's Official Memorandum 37, called upon the country's agricultural and livestock sectors to analyze and assess the water crisis besetting the 10 leading Dominican dams.

This meeting was held because of the situation that farmers and livestock producers are undergoing with the lack of irrigation water. At 12 noon yesterday the Tavera dam water had dropped 12 meters under sea level.

The Bao dam on the river of the same name, the Valdesia in Nizao, the Rincon in Jima, the Cotui, the Sabana Yegua on the Yaque del Sur River, the Sabaneta on the San Juan River, the Hatillo on the Yuna River, the Chacuey, and the Maguaca in Dajabon are in the same predicament.

Because of low water levels, the Tavera dam has not supplied energy to the Dominican Electricity Company for two months. That dam was providing 98,000 kw to the power system.

According to technical data, the Tavera dam has an installed capacity for storing four million cubic meters of water.

At the meeting held in this province's Ranchito community there was a discussion of the crisis afflicting the dams as a result of the low levels of their reservoirs, and of the need to economize on the small amount of water remaining in them for irrigation purposes.

Engineer Del Gallart remarked that, as a result of the drought, during the last spring harvest about 360,000 quintales of rice growing in San Juan de la Maguana and Dajabon could not be harvested.

The Tavera dam, the final link in the Yaque del Norte Irrigation Project (PRYN), was designed and built for multiple use; that is, for electric power production, irrigation, and drinking water.

## GUATEMALA

### **Decree Declares Las Minas Mountain Range 'Protected Area'**

*PA1809001390 Guatemala City PRENSA LIBRE  
in Spanish 15 Sep 90 p 7*

[Text] The Congress of the Republic approved yesterday in a third session a decree declaring Las Minas Mountain Range a protected area. This leaves pending only the approval by articles and a final draft, which will be completed next week.

Following the favorable report by the Environmental Commission of Congress, the draft was discussed in a third session. Showing their willingness to preserve the area, the deputies approved it without any opposition.

Through the provisions of this decree that will become a law, the state will protect Las Minas Mountain Range, which includes part of Alta and Baja Verapaz, El Progreso, Izabal, and Zacapa.

**Lack of Equipment, Glasnost Hampers  
Ust-Kamenogorsk Beryllium Cleanup**

*PM1709204190 Moscow IZVESTIYA in Russian  
18 Sep 90 Morning Edition p 2*

[V. Mirolevich report: "Five Days After the Explosion"]

[Text] Ust-Kamenogorsk—According to figures provided by air and soil analysts, the situation in Ust-Kamenogorsk has gotten back to normal following the explosion at a beryllium production facility. But the problem of washing the city around the clock is just as acute.

Three days ago a small increase in the maximum permissible concentration of beryllium was detected in areas which, according to all the figures, could not have been reached by the poison cloud that formed following the explosion. The only conclusion is that the beryllium threat is being carried around the city by transportation. The only way to prevent the chemical taking to the air again is to keep the streets, sidewalks, and yards constantly wet.

Regrettably, the measures to clean the city are naturally causing pollution of the rivers—the Irtysh and the Ulba. Ecologists from the Environmental Protection Committee are stressing that this must be approached conscientiously, since there is no other choice. However, there is virtually no way to organize large-scale cleaning of the city: the municipal services and enterprises have only a handful of the special vehicles required. It turns out that Ust-Kamenogorsk is supplied with them on the same basis as other cities. And this despite the fact that—bearing in mind the constant pollution of the city by discharges from the nonferrous metallurgy and Ministry of Nuclear Power Generation and the Nuclear Industry enterprises located in the center—the sanitation and epidemiology services at all levels issued an order several years ago prohibiting the territory from being cleansed using dry methods. The streets are supposed to be washed four times a day. The current situation is further complicated by the fact that the fuel quota for the special vehicles has been cut by the republic's Ministry of Housing and Municipal Services to a level that makes it impossible to carry out the task even once a day.

One other "poisonous" factor was revealed at Sunday's emergency commission session—a lack of glasnost. The previous day the commission had drawn up a detailed report for the population on the situation in the city, the measures being taken, and what each citizen should do in the circumstances. However, the leaders of the oblast TV and radio committee refused point-blank to give it air time, stating that they had received no authorization from the oblast leadership and that there was no need to get people excited, since they know everything anyway. Yet even on the fifth day after the accident the city was guided mainly by rumors. The two broadcasts carried on local TV were aimed at one thing only—reassuring people and heading off any possible unrest. Moreover, the TV gave out wrong information, claiming that there was no need to wash anything and that people did not need checkups. It was only on the afternoon of the 16th

that the detailed information the population needed was given out on the radio following categorical demands from the emergency commission.

This episode of a ban on the truth is a typical continuation of the operation of the administrative-edict system: A group of competent specialists with emergency powers believe that people urgently need information, but ideological leaders with a minimal grasp of the subject continue to give out that information in small doses. Unfortunately, this is by no means a unique example. The emergency commission will still have to accurately establish why the first announcement by the civil defense headquarters that there had been an explosion was made almost three hours after the event—when the discharge had already densely covered the city.

**UN Mission To Study Chernobyl Effects**

*LD1909194690 Moscow TASS in English 1936 GMT  
19 Sep 90*

[By TASS correspondent Nikolay Maslov]

[Text] United Nations September 19 TASS—In the end of September, a U.N. mission will head for the districts in the Ukraine, Belorussia and the Russian Federation that suffered from the Chernobyl disaster, U.N. Secretary-General Javier Perez de Cuellar said on Wednesday.

The mission, led by executive secretary of the Economic Commission for Europe Gerald Hinteregger, will visit the Soviet Union in accordance with the decision of the session of the U.N. Economic and Social Council on the international cooperation in cleaning up the aftermath of the Chernobyl disaster.

The delegation will comprise representatives from the office of the U.N. Disaster Relief Co-ordinator, the U.N. Environment Programme, the U.N. Commission on Human Settlements, the U.N. Children's Fund, the U.N. Department in Vienna and the U.N. Department of Technical Cooperation for Development.

The results of the mission's work and the information of measures taken by the International Atomic Energy Agency, the World Health Organisation and the U.N. Food and Agriculture Organisation, will be included in a report the U.N. secretary-general will submit to the 45th General Assembly session.

**Rumors of 'Crack' in Chernobyl Sarcophagus Rebutted**

*PM2109131390 Moscow PRAVDA in Russian 18 Sep 90  
Second Edition p 6*

[Special correspondents V. Gubarev and M. Odinets report under the rubric "Aloud About Rumors": "All Quiet at Chernobyl AES"]

[Text] Chernobyl, Pripyat—Certain Western news media have published a further "sensation" alleging that

the "sarcophagus" at the destroyed fourth reactor unit of Chernobyl AES [Nuclear Electric Power Station] has cracked.

We have been to the station, visited Chernobyl and Pripyat, and called in at Zelenyy Mys, where the international conference on "Biological and Radioecological Aspects of the Consequences of the Accident at Chernobyl AES" was drawing to an end. There was a calm, businesslike mood everywhere—both in the functioning reactor units of the AES and in the building where the conference was taking place. Biologists from 21 foreign countries participated in it. It was preceded by the arrival in the summer of a representative group of International Atomic Energy Agency experts. The participants' attention was drawn to more than 250 reports associated with the problems of the radioecology of plants, radiation genetics, radiobiology, and agricultural ecology.

At the same time a delegation arrived from the French Association of Scientific Journalists, comprising commentators for the newspapers LE MONDE, L'HUMANITE, and LES ECHOS, AFP, television, Radio Luxembourg...

Our French colleagues are touring nuclear enterprises at the invitation of the press club of the Soviet Committee for the Defense of Peace. They have visited Chelyabinsk-40, Kyshtym, and the uranium combine in the city of Zheltyye Vody. Meetings have been held with leading scientists and specialists.

At Chernobyl AES S. Parashin, acting general director of the "Chernobylskaya AES" Production Association, and V. Shcherbinin, director of the enterprise called "Project 'Cover,'" spoke in detail and thoroughly about the situation at the station and the "sarcophagus" and cited convincing data showing that the project is under specialist supervision and is subject to careful observation, the data from which are studied regularly, and that measures are being taken to maintain a normal regime in the destroyed part of it. The future prospects of the "sarcophagus" were expounded to those present. "For the time being, for the next quarter-century," V. Shcherbinin declared, "the cover can fulfill its functions."

The French journalists visited shield control unit "one," where they held a conversation with shift chief G. Karyakin and inquired about the reactor's work. Then they went through to the "sarcophagus" itself and used meters to check the level of radiation—it did not reach a dangerous level. Next the French journalists drove around the "sarcophagus" and were photographed in front of it. Naturally, the apparatus was working, and its data attest that the "sarcophagus" reliably covers the fourth reactor unit and that there are no "cracks" in the "Cover." The following detail was noteworthy—almost nowhere did the guests see people in respirators. This means the radiation situation is normal.

Station workers told the French journalists that the fabrications of individual Western news media and radio

broadcasts in Ukrainian and Russian give rise to alarming rumors in the Ukraine and Belorussia.

Back in Kiev we talked about this with V. Gladush, deputy chairman of the Ukrainian Soviet Socialist Republic Council of Ministers. This is what he said: "The rumors being spread in the West about a crack in the cover of the fourth reactor unit are nothing but a provocation aimed at slandering our power generation, industry, and the country as a whole, which is allegedly quite incapable of coping with the Chernobyl disaster, despite assistance from international science."

The delegates to the scientific conference in Zelenyy Mys and the members of the group of French journalists who visited the fourth reactor unit at the station saw for themselves that the Chernobyl AES is working reliably and that the radiation situation around the "sarcophagus" has not changed.

### Russian Parliament Sets Up Chernobyl Committee

*LD1909162290 Moscow TASS in English 1513 GMT 19 Sep 90*

[By TASS correspondents Lev Aksenov, Yuriy Kozmin, and Pavel Ostrov]

[Text] Moscow September 19 TASS—The Russian parliament decided to set up a republican state committee under the government of the Russian Federation to combat the aftermaths of the Chernobyl disaster. It will be based not in Moscow, but in Bryansk, central Russia, a region most affected by the explosion.

Although more than four years have elapsed since the tragic events in Chernobyl, their consequences are still present. As noted in the report by Fyodor Gaporyan, chairman of the sub-committee for radiation security of the parliamentary Committee on Ecology and Rational Use of Natural Resources, more than one billion roubles have already been spent to deactivate contaminated territories in Russia. But careful radiation checks have still to be carried out in many districts of the Russian Federation. "Particularly dangerous," he stressed, "is the fact that many children are sick in those areas and that agricultural foodstuffs, grown on contaminated soil, are being shipped to other regions of Russia".

Gasparyan believes that the programme to liquidate the Chernobyl consequences should call to answer the officials that did not take necessary measures.

In addition to the bill to set up the new committee, the Russian parliament adopted a decision "On the state programme to eliminate the consequences of the Chernobyl catastrophe in the territory of the Russian Federation for 1990-1995". The document says that "a very tense socio-political situation has arisen in contaminated

areas due to slow measures and a part of the population's mistrust of local and central authorities due to this".

The Supreme Soviet authorised the Russian Procurator's Office to consider the question of calling to answer officials guilty of concealing data on the radioactive contamination of territories caused by the accident at the Chernobyl Atomic Power Plant.

#### **Uranium Wastes Said Contaminating Kirovograd**

*LD1809220590 Moscow Television Service in Russian  
2025 GMT 18 Sep 90*

[From the "Television News Service" program]

[Summary] Unguarded wastes from the proximity of the uranium mines are getting onto the roads on the outskirts of Kirovograd. The gravel-like waste is being asphalted over, but the people are literally being bathed in radiation. Of checks made in 200 places, the background radiation in twelve was more than 100 micro-roentgens, five times higher than the permissible amount, and in Aleksandriyskiy Lane it was as much as four hundred times higher. [Video shows people walking around on radioactive gravel and Geiger counters showing high readings]

#### **Omsk Area Radioactive Waste Site Plan Engenders Public Opposition**

*90WN0255A Moscow IZVESTIYA in Russian  
15 Aug 90 Morning Edition p 2*

[Article by S. Suslikov, Omsk: "Payment for Radiation Risk"]

[Text] A meeting of delegations of peasants from three farms in the suburbs of Omsk has protested the decision of city authorities to store 350 cubic meters of radioactive waste two kilometers from the village of Podgorodka. The affair has reached the point of picketing vehicles arriving at the underground storage site [sarkofag] that is being built.

The essence of the conflict lies, on one hand, the attempt of the already new authorities to solve new problems in the old way—by-passing the public—and, on the other, in the already customary response of the public—picketing, meetings, and ultimatums... It stands to reason that both sides are listening only to themselves and are remaining "with their own." The conflict is a typical one. The old authorities solved their problems by force. The new ones are frequently feeble because they have not worked out any different methods of convincing people that they are right. Should we be surprised that the responsible workers at the oblast and city levels, who did not condescend to meet with people either before or after making this ecological decision, were forced to act in secret.

Could it be otherwise? Alas, it is necessary once more to state something that is obvious. We need a market not

only to fill shop shelves with consumer goods, but also as a reliable mechanism for regulating conflicts between the individual, society, and the authorities. As is known, there is no market unless there is an owner and it is precisely thus that the land on which the authorities have decided to construct the radioactive waste site and the moral and material losses which the owner of the land and its closest neighbors must necessarily bear should be a subject of negotiations: It is necessary to purchase the land, to compensate losses, and to guarantee safety...

As regards this problem, then it is in fact a new one. On the initiative of the Omsk city soviet executive committee (IZVESTIYA reported about this in its issue no. 194), the first radiation map of a city is being prepared. In the course of preparatory work, a number of sources of radiation pollution were announced—sources of the 350 cubic meters of waste that has to be buried somewhere. It is also known that similar maps are being created or will be created in other cities of a million inhabitants. And does this mean that history may be repeated?

A notice had already been prepared for the press when promising news came. The oblast authorities had made an attempt to correct the mistake of the city authorities and had offered the Petrovskiy rural soviet, on whose territory the underground site is being built, one million rubles as compensation. There was a unscheduled session of the rural soviet, which rejected what would seem to have been an advantageous offer.

"The deal did not take place because the other side has a tarnished reputation"—the director of the Petrovskiy Sovkhoz, R. Akhtsiger, commented on the situation. "Yes, we need the million, but the deputies, insulted by the uncivilized actions of those who hold the power, who stole a piece of land from the sovkhoz, refused the money. And still... Yesterday's session for the first time discussed a business proposal of the oblast soviet executive committee as an equal partner—this is, unconditionally, a new qualitative breakthrough. And it is here, on this path, that it is necessary to seek the solution of problems—today's and those of tomorrow. And not to forget that a reputation costs money. And not a little."

#### **Compensation for Residents of Contaminated Apartments in Omsk**

*PM2009125590 Moscow IZVESTIYA in Russian  
9 Sep 90 Morning Edition p 6*

[Report by S. Sergeyev: "Radiation Compensation"]

[Text] A joint session of the Omsk Oblast and City Soviets has decided to pay compensation to people who have been living in apartments with high background radiation.

A year ago there was a scandal in Omsk that cost the career of V. Konovalov, chief of the "Omskstroy" Main Administration. The oblast soviet executive committee gave him a vote of no confidence for his efforts to make



up the ground lost when building houses from... radioactive panels. Then there were numerous commissions, which identified instances of builders' using gravel from the Makinsk quarry in Kazakhstan, which has high background radiation, since the early fifties.

The result is compensation. At the moment partial, mere kopeks for sure, from the city's sieve-like coffers... But there is an important principle here. According to experts, compensation is the first step toward the establishment of differentiated payment for housing, depending on its quality.

### **New Lithuanian Ecological Newspaper Noted**

*90P50104Z Vilnius TIESA in Lithuanian 8 Sep 90 p 6*

[Report by Aleksandras Kezys under the rubric "New Publications": "SOS, We Congratulate You!"]

[Text] Lithuania should know everything about the environment in which we live. "SOS will provide information on construction projects for new facilities, interview experts on the environment, publicize their research results, write about the experience of other countries in the area of the environment," this is how the editors of the new, fortnightly newspaper are introducing it to readers, stressing that this publication is not only for ecologists.

This new newspaper is not only surprising, but also gratifying. When we see old, yellowed stacks of ZALIOJI LIETUVA [GREEN LITHUANIA] or TEVISKES GAMTA [NATURE OF OUR NATIVE LAND] at the kiosks, we wonder if the same fate won't befall SOS. On the other hand, this first issue leads one to think that perhaps people will be eager to see the paper and will ask for it, if the editors avail themselves of the information, readers' facts and ideas which are sent in to its publisher, the Environmental Protection Department of the Republic of Lithuania.

So, good luck, SOS.

### **Latvian Petition Opposes Military Communications Facilities**

*LD2009221190 Riga Domestic Service in Latvian 1730 GMT 20 Sep 90*

[Excerpts] The presidium of the Supreme Council of the Republic of Latvia adopted several important resolutions today. [passage omitted]

A petition, signed by many inhabitants, has been received from the council of people's deputies of Kuldiga Rayon, directed against the activity of military devices in this rayon. It states that at the demand by the USSR Armed Forces, and with the permission of the Council of Ministers of the Republic of Latvia, new communications devices for military purposes are being built in Kuldiga Rayon, which are planned to come into use within the next two years.

According to official data of the USSR Armed Forces General Staff, the devices already in operation are exceeding the permissible norm for electromagnetic radiation, which endangers the rayon's inhabitants. Taking into consideration that the devices being built at present are situated close to the town of Kuldiga and the urban settlement of Skrunda, the inhabitants of Kuldiga Rayon demand an ecological and biological examination by experts, with the inclusion of the rayon's specialists, and request an examination of the question on a restriction or discontinuation of the activity of these devices or harmless use of them for civilian requirements.

The presidium charged the commission for defense and internal affairs and the commission for social security and health with the task of specially acquainting themselves with the conditions in Kuldiga and Skrunda territories where these dangerous military devices are situated, and also of preparing a reply to the Council of people's deputies of Kuldiga Rayon by 4 October. [passage omitted]

### **Latvian Environmental Activist on Problems, Goals**

*90WN0277A Stockholm DAGENS NYHETER in Swedish 29 Jul 90 p C 16*

[Article by Staffan Widstrand: "High Time to Protect the Fields in Latvia"]

[Excerpt] "In Latvia today we have absolutely exceptional numbers of birds and animals which are very rare in the rest of Europe. Here, at a distance from Stockholm which is less than the distance from Stockholm to Malmo, 6,500 pairs of white storks breed, as do perhaps 1,000 pairs of black storks and a total of several hundred pairs of other, different species of eagles. We have many otters, beavers, martens, wolves, lynxes, boars, and red deer."

Maris Strazds, 30, is one of Latvia's most active biologists and environmentalists. Together with his brother Agris and others, he has, among other things, published an ambitious encyclopedia of Latvia's birds. Recently he served as the host for a delegation of Swedish ornithologists which did the field work for an inventory of eagles and black storks.

"I am uneasy about Latvia's environment," Maris Strazds said. "Right now we have two big environmental problems—industrial effluent and pollution on the one hand and the new agriculture law on the other."

In most instances, the discharge of pollution from industries and cities is completely untreated. For example, Riga, a city with a population of one million, has no treatment facility whatsoever; rather everything goes into the Daugava River and from there into the sea. Today parts of the Bay of Riga—with some of Europe's loveliest sand beaches—are so dirty that swimming there is prohibited. All too little is yet known about the

widespread dumping on land and at sea of substances toxic to the environment, a subject which is just beginning to be investigated.

"What little we know points in a terrible direction. Certain areas—such as, for example, the area near the pulp mill at Sloka or a leaking dump site 30 kilometers from Riga—are absolutely inhabitable. People have been injured after picking up what they thought was amber on the beach but which proved to be phosphorus from bombs with which the military mined the sea. Children swimming in the sea have suffered corrosion damage."

The aim of the new agriculture law is that fields should revert to private ownership and be distributed to those who will put them to use. This of course is good and necessary—while under Soviet rule, in Latvia more than one million hectares of farmland reverted to untilled brush and swamp. Privately-owned fields and forests will be utilized more efficiently and better, but there is one development above all others where forests and wetlands are concerned which is not positive.

"The problem is that the agriculture law says that a field which has not been 'used' within two years after a claim reverts to the state," Strazds said. As regards forests, "use" then means that someone must clear out the trees or drain the area, in the case of wetlands it means draining and reclamation.

Owing to the planned economy, large areas of forest and wetlands have scarcely been used at all, but rather left more or less untouched since 1940. To the benefit, it goes without saying, of animals and birds.

"What we now need is to generate information about which areas are the most deserving of protection, so we can protect them while the state still owns all the fields. Later the state will not be able to afford this. But today the state has reacted positively and told us that if we show them a list of the most important nature areas, in priority order, they will protect them as long as possible."

#### Cooperation With Sweden

But the money to finance the inventory is not to be found with the state, its support is idealistic. In a race against time, biologists are inventorying forests, lakes, wetlands, and migratory bird sites, counting stork nests and the nests of birds of prey and grouse mating areas as fast as they can.

"But this is proceeding much too cautiously and there are still too few of us. That is why we have now begun to cooperate with Swedish ornithologists to get help with our field work. The first Swedish groups were here in May and June of this year, and more will come this autumn and next spring."

They will inventory a number of important areas and furthermore study bird migration patterns in a couple of places. To accomplish this, Latvian biologists have

begun to get much support from the Swedish World Nature Fund, and, as soon as possible, they will begin cooperating with Swedish universities. [passage omitted]

#### Alma-Ata Oblast Hydro Projects Seen Likely To Cause Ecological Crisis

90WN0255B Alma-Ata KAZAKHSTANSKAYA  
PRAVDA in Russian 25 Jul 90 p 1

[Article by M. Makulbekov, Alma-Ata Oblast: "A Canal Leading Into a Dead End"]

[Text] Redirection of a part of the flow of the Karkara River into the Issyk-Kul and construction of the Muynak Hydroelectric Power Plant on the Charyn River—this is planned ecological catastrophe, scientists in the republic believe. "The people have grown tired of anticipating a calamity..."—Bakbergen Mananov, a deputy to the Shigrafskiy rural soviet and chairman of the Kegenskiy Rayon's Committee to Save the Karkara River, writes to the editors of KAZAKHSTANSKAYA PRAVDA. But the alarmed voices are being drowned out by explosions and the roar of powerful equipment. Construction of the hydro project continues.

A snow-white hill against a background of lush green suddenly comes into view, like a mirage. It beckons, promising longed-for coolness. Gleaming under the rays of a merciless sun, a stream runs from under a "snow-drift." The impression is as if an iceberg, one that has appeared from nobody knows where, is slowly melting in this shallow ravine.

But this is not snow. It is salt. And the place is called Tuzgen.

Old-timers say that, during the war years, there was a salt works here, not far from the village of Karkara. Today, knowledgeable people maintain that the salt cannot be used in food inasmuch as it is not table salt, but something else. The argument is a theoretical one because, in practice, the citizens of Karkara use it daily, eat it with meat and drink it with tea. The fact is that two water supply systems exist within the village. The state system functions periodically. And the water taps do not come to life for long. And, mainly, as in old times, people get their water supplies from the Karkara, into which flows the salty stream described above.

In the words of the chief physician at the rural outpatient clinic, T.S. Kerimova, the high mineralization of the water has an influence on illness statistics. The residents, who constantly drink the salty water, are plagued by a high incidence of arteriosclerosis, hypertension, and other ailments. Added to these are mange, hepatitis, dermatitis, and intestinal disorders. But these, the doctor believes, are the results of economic management: livestock farms are operating upstream, with the consequences that flow (in the direct sense) from them, the river is located in the path of cattle drives, etc. But this is not a discussion about man-made things. We are only interested in that part of the problem which has been

foreordained by nature and by the location of the villages of Karkara, Zhalanash, and others, downstream on the river. Now they have water that is suitable for drinking, no matter what its taste. But if they direct half the flow from the upper reaches of the Karkara into the Issyk-Kul, then thickly salted brine will flow along the old course past the villages of Kegenskiy Rayon... Neither people nor animals will be able to drink this water. Crops will die.

There were hopes for underground wells, but these have not been justified: everywhere, the drills have run into layers of salt...

This is not the first year that scientists and the public have been trying to call the attention of the authorities to the silent activities of the USSR Ministry of Water Resources (Minvodkhoz). Doctor of Biological Sciences, Professor P.I. Marikovskiy has repeatedly spoken out in the press. His colleagues from the Academy of Sciences have appealed to the government of the republic. But the authorities, as they say, have paid no heed.

Meanwhile, construction of a canal 15 kilometers long, through which it is proposed to transfer the water of the Karkara to Issyk-Kul, is being successfully completed.

Before presenting the arguments of the department that is transforming nature and of those who are trying to prevent calamity, we should, in my view, touch upon the history of the problem. In the beginning of the 1980's, authoritative specialists travelled to the Kirghiz SSR from Moscow. They were concerned about the fate of Issyk-Kul Lake, which had begun to grow shallow. Having studied the situation and discussed alternatives, the specialists decided that it was necessary to supplement the Pearl of the Mountains with water from the Karkara. This decision was later approved by a USSR Gosplan state expert commission. They also established the volume of the river's flow that was to be transferred—180 million cubic meters. The bureaucratic machinery was set in motion and now, for almost ten years already, it has not deviated from the chosen course, despite calls to reason and despite changed circumstances.

Begin with the fact that if even half the flow of the Karkara reaches the remarkable lake without being lost, its level will be raised a total of 7-10 millimeters! But these are projections and calculations. Nobody knows today whether the water will reach its intended destination at all. Indeed, the Karkara will run only a part of the route along the concrete bed of the canal, to the Tyup River that falls into the Issyk-Kul. And the farmers from the neighboring republic will doubtlessly figure on using water from the canal for irrigation...

But the most interesting thing is that, today, Issyk-Kul has no need at all for an artificial influx. The lake is no longer growing shallower.

"During the past three years, according to meteorological data, the level has constantly increased and has already

risen a quarter of a meter! So that there is no reason to save Issyk-Kul from drying up. The lake is living on its own... So, is it worthwhile interfering in natural processes with the help of a bulldozer?"—this question is reasonably asked in an article entitled "How is Your Health, Issyk-Kul?" that was published in the newspaper SOVETSKAYA KIRGIZIYA on 28 January of this year.

But construction of the canal continues.

The residents of the Kegenskiy and Uygurskiy rayons await with alarm the beginning of the end. They learned about the fate that has been prepared for the Karkara only last year. Before this, the departments did not even think to inform the population of their plans. But now, the public has begun to take active measures. Probably there is no party or state organ left that has not been advised of the coming problems. And what has been the outcome? The chairman of the rayon Public Committee to Save the Karkara River has passed on to the editors whole bundles of formal replies sent by departments and governmental institutions. So far, there have been not other results.

The situation is aggravated by the fact that the preparations for ecological catastrophe being made units of the country's and the republic's ministries of water resources are thorough, planned, and complex. Powerful departments have begun construction of the Karkara-Issyk-Kul Canal simultaneously with erection of the Muynak Hydroelectric Power Plant on the Charyn and construction of the Bestyubinskiy reservoir. Technical plans for it were approved in 1985 by the USSR Ministry of Water Resources in coordination with the former USSR Ministry of Agriculture. Taking part in development of the plan were 20 scientific-research organizations, the USSR Ministry of Energy, the Ministry of the Timber Industry, and so on. They did not consider it necessary to coordinate only with the people who were most interested—with the population of the places where it had been decided not to expect any favors from Nature.

If you take a look at the map of Alma-Ata Oblast, it will be evident what this large-scale construction threatens. The Karkara falls into the Charyn, and in the end the waters go to Lake Balkhash, which for many years has suffered from a shortage of water. But the builders of the hydro project are not breaking their heads about this. They are mainly worried about fulfilling their assigned plans on time.

...A trip to the hydroelectric power plant that is under construction, more correctly, along route to it, was, as it were, an excursion through precious places of indescribable beauty. To make up for this, the picture of wide-scale attack on nature was dispiriting. A lunar landscape of heaped stones—where rock faces have been dynamited. Accumulations of equipment and trucks. This is how what was formerly one of the most picturesque corners of Kazakhstan looks now.

For thousands of years, the Charyn has carried its waters along a channel that was manufactured by Nature. Now

the river has been squeezed into a man-made tunnel. With time, when a hundred-meter dam has risen on the path of the water and the man-made tunnel will be bricked-up, the Charyn will fill the bowl of the reservoir—more than two cubic kilometers. And then the level of Lake Balkhash will fall even more. Then the special natural features of Aktorgay and Sartogay, fed by the waters of the Charyn, will perish. The surviving grove of ash trees, which has lived five million years, will also cease to be! There are only two such on our planet. One is in Canada, the other—not far from Chundzhi, the administrative center of Uygurskiy Rayon. The ash are watered once a year, in the spring when the Charyn floods its banks. Will the river flood next year?...

People in Uygurskiy Rayon are no less worried than those in neighboring Kegenskiy Rayon. For long decades, local residents have been wresting farmland from the desert, centimeter by centimeter. They are now in despair. Let us make the acquaintance of one of them. The blinding sun, the lifeless sand that breaks off abruptly at the boundary of the oasis, and a man with a hoe, burnt almost black by the sun.

"I don't know how I will live, what I will feed my ten children, if there is no water," says Mametzhn Kabirov, an irrigation worker at the sovkhos imeni Robybak-iyev...

The task of the hydro construction workers is, I repeat, simple: to hammer the people's millions into various—needed and unneeded—construction projects and to take a part of the budgeted funds in the form of wages. This is how they have worked, and how they are continuing to work...

I recall an abandoned tunnel not far from Lake Kulsay. Specialists from the Alma-Ata Tunnel Construction Association (Almaatatonnelstroy) decided to direct the flow from the lake through rock but ran into quick ground and stopped work. They had succeeded in cutting their way two hundred meters from one direction and had gotten in several paces from the other. They had spent more than a million rubles in public money and were content with this. Now they are laying a channel alongside the rock that had betrayed their expectations. This is in case the lake should become overfull.

A man-made cave, needed by nobody, remains in the rock. Now the hydro construction workers are seeking and finding more and more places on the map of the republic where they can apply their not-inconsiderable forces and finances. At the same time, an expenditure economy, no matter what we have been told about economic accountability, is dictating the rules of the game to this department: the larger the project, the more prestigious and advantageous it is. Both for the managers and for the workers. It is easy to suppose, following departmental logic, that if today the idea came up to cut tunnels in icebergs for no particular reason, but with the goal of investing capital and earning wages, then the ministry would quickly prepare the necessary documentation and would coordinate the plan with whomever necessary. And there would appear to be nobody to stop them.

In a word, matters are reaching the point where it probably will soon be necessary, following the Aral Sea and Semipalatinsk, to declare the capital oblast to be an economic disaster zone.

## EUROPEAN AFFAIRS

### European Geospace Center for Satellite, Cartography Data

90AN0392A Paris LA LETTRE HEBDOMADAIRE DU GIFAS in English 5 Jul 90 p 2

[Article: "Creation of Geospace"]

[Text] La Lyonnaise des Eaux, CAP SESA, and the French National Geographic Institute (IGN) have pooled forces to create a joint venture known as "Geospace". This will be the first European Center for satellite and cartography data for protection of the environment and control of the territory. Geospace will operate a single data bank of images gathered by the satellites SPOT, Landsat, NOAA and the cartographical information collated by IGN. It will be managed by specialists (geologists, agronomists, urbanists, specialists in large projects) and will be consulted for national and international projects by: planners conducting impact studies preceding large-scale projects, such as TGV rapid trains, road and highway networks, site determination; by agricultural specialists interested in following-up harvest predictions, land-reclaiming; civil bodies involved in environment protection, pollution, etc.; environmental specialists and managers of natural resources. The data base is available at the center directly or remotely via image processing stations connected to the resource center via the Numeris network. Geospace is located in the Savoie area at the Chambéry Savoie Technolac center. It will be supported by the National Center of Space Studies (CNES), the Savoie General Council (and its Chairman, Michel Barnier), Savoie University, and by the Spot Image Co. Geospace will be managed by Daniel Mary, formerly in charge of development of satellite image processing facilities of the CNES "Industrial Policies" Division.

### EC Mandates Access to Environmental Information

90AN0350A Luxembourg OFFICIAL JOURNAL OF THE EUROPEAN COMMUNITIES in English No L158, 23 Jun 90 pp 56-58

[Article: "Council Directive On the Freedom of Access to Information on the Environment"]

[Text] The Council of the European Communities,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130s thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Considering the principles and objectives defined by the action programme of the European Communities on the environment of 1973, 1977 and 1983, and more particularly the action programme of 1987, which calls, in particular, for devising "ways of improving public access to information held by environmental authorities";

Whereas the Council of the European Communities and the representatives of the Governments of the Member States, meeting within the Council, declared in their resolution of 19 October 1987 on the continuation and implementation of a European Community policy and action programme on the environment (1987 to 1992) that it was important, in compliance with the respective responsibilities of the Community and the Member States, to concentrate Community action on certain priority areas, including better access to information on the environment;

Whereas the European Parliament stressed, in its opinion on the fourth action programme of the European Communities on the environment, that "access to information for all must be made possible by a specific Community programme";

Whereas access to information on the environment held by public authorities will improve environmental protection;

Whereas the disparities between the laws in force in the Member States concerning access to information on the environment held by public authorities can create inequality within the Community as regards access to information and/or as regards conditions of competition;

Whereas it is necessary to guarantee to any natural or legal person throughout the Community free access to available information on the environment in written, visual, aural or data-base form held by public authorities, concerning the state of the environment, activities or measures adversely affecting, or likely so to affect the environment, and those designed to protect it;

Whereas, in certain specific and clearly defined cases, it may be justified to refuse a request for information relating to the environment;

Whereas a refusal by a public authority to forward the information requested must be justified;

Whereas it must be possible for the applicant to appeal against the public authority's decision;

Whereas access to information relating to the environment held by bodies with public responsibilities for the environment and under the control of public authorities should also be ensured;

Whereas, as part of an overall strategy to disseminate information on the environment, general information should actively be provided to the public on the state of the environment;

Whereas the operation of this Directive should be subject to a review in the light of the experience gained,

Has adopted this directive

#### Article 1

The object of this Directive is to ensure freedom of access to, and dissemination of, information on the environment held by public authorities and to set out the basic terms and conditions on which such information should be made available.

#### Article 2

For the purposes of this Directive:

a. "Information relating to the environment" shall mean any available information in written, visual, aural or data-base form on the state of water, air, soil, fauna, flora, land and natural sites, and on activities (including those which give rise to nuisances such as noise) or measures adversely affecting, or likely so to affect these, and on activities or measures designed to protect these, including administrative measures and environmental management programmes;

b. "Public authorities" shall mean any public administration at national, regional or local level with responsibilities, and possessing information, relating to the environment with the exception of bodies acting in a judicial or legislative capacity.

#### Article 3

1. Save as provided in this Article, Member States shall ensure that public authorities are required to make available information relating to the environment to any natural or legal person at his request and without his having to prove an interest.

Member States shall define the practical arrangements under which such information is effectively made available.

2. Member States may provide for a request for such information to be refused where it affects:

- The confidentiality of the proceedings of public authorities, international relations and national defence,
- Public security,
- Matters which are, or have been, *sub judice*, or under enquiry (including disciplinary enquiries), or which are the subject of preliminary investigation proceedings,
- Commercial and industrial confidentiality, including intellectual property,
- The confidentiality of personal data and/or files,
- Material supplied by a third party without that party being under a legal obligation to do so,
- Material, the disclosure of which would make it more likely that the environment to which such material related would be damaged.

Information held by public authorities shall be supplied in part where it is possible to separate out information on items concerning the interests referred to above.

3. A request for information may be refused where it would involve the supply of unfinished documents or data or internal communications, or where the request is manifestly unreasonable or formulated in too general a manner.

4. A public authority shall respond to a person requesting information as soon as possible and at the latest within two months. The reasons for a refusal to provide the information requested must be given.

#### Article 4

A person who considers that this request for information has been unreasonably refused or ignored, or has been inadequately answered by a public authority, may seek a judicial or administrative review of the decision in accordance with the relevant national legal system.

#### Article 5

Member States may make a charge for supplying the information, but such charge may not exceed a reasonable cost.

#### Article 6

Member States shall take the necessary steps to ensure that information relating to the environment held by bodies with public responsibilities for the environment and under the control of public authorities is made available on the same terms and conditions as those set out in Articles 3, 4, and 5 either via the competent public authority or directly by the body itself.

#### Article 7

Member States shall take the necessary steps to provide general information to the public on the state of environment by such means as the periodic publication of descriptive reports.

#### Article 8

Four years after the date referred to in Article 9, the Member States shall report to the Commission on the experience gained in the light of which the Commission shall make a report to the European Parliament and the Council together with any proposal for revision which it may consider appropriate.

#### Article 9

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1992 at the latest. They shall forthwith inform the Commission thereof.

2. Member States shall communicate to the Commission the main provisions of national law which they adopt in the field governed by this Directive.

#### Article 10

This Directive is addressed to the Member States.

Done at Luxembourg, 7 June 1990,

For the Council The President P. Flynn

### EC To Subsidize Reactor Safety Research

90AN0390A Brussels *EUROPE in English* 2 Aug 90 p 5

[Article: "EEC Research/Nuclear Fission Programme: The European Commission Proposes a Budget of ECU 200 Million for 1990-1994 Research on Reactor Safety and Protection Against Radiation"]

[Text] Brussels, 1 August 1990—The European Commission adopted today its penultimate proposal for a specific research programme under the Community's 1990-1994 research and technological development framework programme. This proposal complements the 13 projects presented on 25 April last and concerns the area of nuclear fission. The Community will not subsidize research into the production of energy through fission, since this type of production is now profitable and industrially exploited; Community efforts will rather focus on two aspects which condition the acceptance of nuclear energy and its support by public opinion, namely protection against radiation and the safety of reactors.

Here are the main elements of the proposals forwarded to the Council at the initiative of Vice-President Pandolfi.

#### A. Radioprotection

Exposure to radiation is likely to result in serious consequences for health and the genetic heritage of human beings (for example cancer and congenital malformations). The objective of the programme is to improve, through effective research activities, the knowledge of effects and risks linked to exposure to radiation, more particularly those resulting from low doses, in order to elaborate appropriate common protection standards and regulations.

#### B. Safety of Nuclear Plants

The scope of the consequences of the Chernobyl catastrophe is a reminder of the importance that must be given to the safety of nuclear plants. In this respect, research will focus on the safety of containment of radioactivity in case of nuclear accident. More precisely, it will focus on: the study of the various evolutive stages of a nuclear accident; the quality and performance of containment systems; human errors in such circumstances and the most effective ways of correcting them.

### C. Budget and Management

The total overall budget of the programme amounts to ECU 199 million for a 5-year period (1990-1994). It will be implemented through shared-costs research projects, direct research activities by the Joint Research Center (JRC), concerted actions and accompanying measures (dissemination of results, training, etc.). The research undertaken by the JRC will be further defined by a separate Council decision.

### EC Approves Moves To Reduce CFC Use

90AN0352A Brussels *EUROPE in English* 28 Jun 90 pp 7-8

[Report: "Environment/Ozone/CFC: The European Commission Has Adopted Two Recommendations on Voluntary Reduction of the Use of CFC Accepted by Two Sectors of Industry"]

[Text] Brussels, 27 June (EU)—The European Commission has approved two recommendations calling on the European plastic foam and refrigeration industries to voluntarily reduce their use of CFCs (chlorofluorocarbons), the gas that depletes the ozone layer. The first recommendation provides for a 35-percent reduction in the use of CFCs in plastic foams by 1991 and a 65-percent reduction by 1993 in relation to 1986 consumption. The second recommendation provides for a 25-percent reduction in the use of CFCs for refrigeration in the European refrigeration industry by 1991 and a 50-percent reduction by 1993 in relation to 1986 consumption. Further, the two industries agreed to completely eliminate the use of these gases by the year 2000. The recommendations, which have already been accepted in principle by the two industries, are the result of consultations between the Commission and associations in the sectors in question, which assured the Commission that they will recommend to their members to respect the reduction programme contained therein.

EUROPE reminds readers that the Council, in its resolution of 14 October 1988 on limiting the use of CFCs and halons, called on the Commission to initiate talks with the industries using this type of gas in order to conclude agreements for voluntary reduction Community-wide.

EUROPE also recalls that the conference on the review of the Montreal Protocol on substances that deplete the ozone layer is currently taking place in London. The EC, which is in an advanced position in this matter, is proposing the elimination of the production and distribution of CFCs, among other gases, for 1997 or the year 2000 at the latest.

**10-Year Lag in EC's Clean Car Technology Reported**  
*90AN0337A Brussels EUROPE in English 8 Jun 90 p 14*

[Report: "Environment/Clean Car: According to BEUC and EEB, Community Projects for the Reduction of Polluting Exhaust Is 10 Years Behind Available Technology"]

[Text] Brussels, 7 June (EU)—The BEUC (European Bureau of Consumer Unions) and the EEB (European Environmental Bureau) consider that although the Environment Council is pursuing the proposals on its table, the EC will remain, as far as the control of polluting vehicle exhaust is concerned, ten years behind available technical progress. European manufacturers are producing models for the American market which are "the last cry in technology" while continuing to sell "80s" models within the EC. According to the BEUC and the EEB, the EC should apply, by 1995 at the latest, the limits provided for in the U.S. for 1993. At the present time, pollution due to motor vehicle exhaust fumes increases at a rate of three percent per year because of the growing numbers of cars and it is not the Commission's current proposals which will enable this pollution to be "drastically" reduced.

The only positive point for the two organisations is the Commission's proposal on automobile energy efficiency. They trust the Council will be able to come to a rapid decision on this matter.

The BEUC and EEB criticise above all the limits proposed for cars of less than 1,300 cc. Those put forward for 1993 in the EC are not as strict as those in application since 1983 in the US, and will be even less so compared to those that the US is preparing to enforce in 1993. In particular, for particules in suspension, the Community limit proposed, for mass-produced cars, is twice as much as the American limit in 1983 (0.24 g/km against 0.1) and five times higher than the 1993 American norm (0.05 g/km).

Both organisations also criticise the provisions related to the trials (urban cycle, extra-urban cycle) and test of duration of conformity and consider that small commercial vehicles should be submitted to the same pollution limits as private cars (from which they are usually derived).

**EC Framework Directive on Waste Disposal Planned**

*90AN0340A Brussels EUROPE in English 16 Jun 90 p 12*

[Report: "Environment Directive on Waste: Beginning in June 1992, EC Will Have To Be Self-Sufficient in Waste Disposal, Which Will Have To Be Carried Out as Near as Possible to the Production Site"]

[Text] Luxembourg, 15 June (EU)—The Environment Council of 7 June expressed its agreement on strengthening the 1974 directive on waste, which will now have the nature of a framework directive. Its entry into force

is planned for June 1992 (two years following notification). The framework directive falls within the main guidelines of the EC strategy on waste, which the Council had already supported in its resolution that was formally adopted on 7 May (the ministers reached agreement at the Environment Council on 22 March) on the communication to the European Commission on the Community strategy for waste management, submitted in September 1989. The general objective is to have the Member States guarantee waste disposal or recycling which does not endanger human health and does not use processes or methods likely to harm the environment.

The framework directive primarily prescribes EC self-sufficiency in waste disposal, while imposing the requirement that elimination must take place as near the production site as possible. The small Member States are allowed to export waste in the event the operation of a national disposal network does not prove to be cost-effective. Article 5 of the directive is written as follows: "The Member States ... [establish] integrated and adequate disposal facilities, taking into account the best available technologies that do not involve excessive costs. This network must allow the EC as a whole to become self-sufficient in waste disposal and the Member States to individually set about reaching this goal, taking into account the geographical circumstances or the need for specialised facilities for certain kinds of waste. This network must also allow the disposal of waste in one of the nearest disposal facilities."

The directive likewise insists on the promotion of clean technologies and recyclable and reusable products and thus strengthens the priorities contained in its first version. The Member States must take measures to promote:

- a. The prevention or reduction of the production of waste and its level of harmfulness, particularly by developing technologies that are clean and use fewer natural resources and through the use of clean products,
- b. Recycling, reuse or any other process by which secondary raw materials can be obtained, and
- c. The use of waste as a source of energy.

The framework directive also includes specific clarifications, in particular with regard to the definition of waste: "any substance or any object included in the categories (defined in an annex to the directive) which a holder rids himself of or which he intends or is required to rid himself of." These can include outdated products, matters that are contaminated or sullied due to voluntary activities (containers, packaging materials, etc.), the residues of industrial processes or anti-pollution processes (slag, sewage sludge), indeed all production or consumption residues. In a double annex, the directive recapitulates the disposal operations and the recycling operations as already practised. It includes a procedure for adaptation of all the annexes to technical progress. But the directive excludes from its scope a large body of waste such as: radioactive waste, waste resulting from the



operation of mines or quarries, animal cadavers and certain agricultural waste, waste water (other than waste in the liquid state), gas emissions released into the atmosphere and obsolete explosives already covered by other legislation.

Companies (or establishments) that carry out disposal and/or recycling operations must obtain authorisation (other than the exceptions defined in the directive) for the first type of operation. This authorisation will have to be provided by the competent authority defined in the directive, which also enumerates the content of the authorisation (types and amount of waste, precautions to take regarding safety, site determination, methods of processing). For the second type of operation, authorisation is also required, but this authorisation is not defined in the directive. This solution reflects a compromise between the delegations that were opposed to authorisation for recycling in order to encourage its development (such as the FRG) and those who wanted to subject recycling operations to the same authorisation conditions (the Netherlands).

Companies that provide professional services in the area of collection, transport, waste dealing or brokerage, will be required to register with competent authorities.

Finally, in compliance with the polluter-pays principle, the cost of waste disposal must be borne by:

- a. The holder who gives the waste to a collection service or company, and/or
- b. The previous holders and the producer of the product from which the waste results.

### **Belgium, Italy Violate EEC Waste Directives**

90AN0341A Brussels *EUROPE* in English 18-19 Jun 90 p 10

[Report: "Court of Justice/Environment: Rulings Against Belgium and Italy for Nonapplication of Several Environment Directives"]

[Text] Luxembourg, 18 June (EU)—The European Court of Justice has ruled against Belgium for noncompliance with the provisions of four EEC directives on waste. The European Commission has accused the Brussels region of not having submitted triennial reports on the situation concerning the elimination of waste oil, waste in general, PCBs, and toxic and dangerous waste. Belgium, which is responsible for inaction on the part of any of its regions, claimed before the Court of Justice that the bill that was supposed to implement the four waste directives in the Brussels region has been filed with the Conseil d'Etat and that the regional council was to take a decision shortly. The Court did not accept this delay.

The Court has likewise ruled against Italy for the same violation: The Italian Government has not submitted to the Commission the information concerning the same

directives (except the one on waste oil, which, in the Italian case, is not in question).

### **Italian Researchers Report Mediterranean Pollution Findings**

90WN0280A Rome *L'UNITA* in Italian 1 Sep 90 p 12

[Article by Ninni Andriolo: "The Mediterranean Is a Little Less Sick, But There Is Still Cause For Concern"]

[Text] Rome—The Mediterranean waters are a little less sick, but there are no grounds for too many illusions. While there appear to be fewer excessively polluted samples with respect to the 1989 summer season, more than one-fourth of the Italian sea is still not in good health and "there is no reason for it not to be more or less extensively affected by the problem." That is the final diagnosis of a careful, scrupulous "checkup" lasting more than two months, the time needed to have the three laboratory-boats of the 1990 Green Ship program cover the thirty thousand kilometers of Italian and foreign coasts. In fact, in July and August the "Anoelle," the "Highlander," and the "Helios Re" have felt the pulse of our seas and also those of the Cote d'Azur, the Balearic Islands, Malta, Corsica, and the Istrian peninsula.

Green Ship promoters, having reached the fifth year of scientific cruises, are already thinking of the future, and Ermete Realacci, president of the Environmental League, is planning new projects. For example, the one for "constructing a program of marine pollution sampling including all the coasts of EEC countries on the Mediterranean." Thus, already this year, 103 of the 1,290 samples were taken in foreign territorial waters. And with respect to last summer, the fact is that the percentage of samples appearing more polluted than permissible was reduced by around 10 percent. However, according to Mario Di Carlo, of the National Secretariat of the ARCI [Italian Cultural-Recreational Association, a large PCI [Italian Communist Party]-controlled cultural organization] environmentalists, "It is an apparent improvement, concentrated only in some regions, and it probably depends on meteorological factors."

Which ones? Dry weather, which reduced the flow of polluted water coming from rivers, and stormy weather, which kept algae slime away from the Adriatic coasts. These would be the elements which compensated and made less evident a deteriorating situation which, on the other hand, occurred in such cases as in Latium, where Mario Di Carlo maintains, "The whole stretch to the north and to the south of the mouth of the Tiber was found to be more than ever an open-air sewer," and in Campania, where ten of the eleven samples taken at the outlets of fresh water streams appeared more polluted than permissible, containing an extensive amount of microbiological pollution above the legal level.

The Environmental League leaders stressed, "The analyses carried out demonstrate that no effective sea reclamation effort can neglect action upstream to clean

Italian rivers of the tons of poisons discharged [into them] each day. But the data obtained by Green Ship [investigations] and which substantially concern microbiological pollution connected with private [nonindustrial] refuse, indicate a varied situation. In the north there is a disproportionate contribution of river pollution, and in the south there is a disproportionate presence of tourists "with respect to the absorption capacity of the sewage infrastructures and purification networks." Thus, there is no occasion for rejoicing in Italy.

And in the other countries? While in Corsica, the Balearic Islands, and the Istrian peninsula the sea water appeared "relatively uncontaminated," the Cote d'Azur situation appears "rather alarming, with broad stretches of the shore very polluted." The worst situation, however, is along the coasts of Malta. There, all the samples taken were above the legal level, with respect to Italian limits. That is as if to say that things can always be worse somewhere else.

## BELGIUM

### Nuclear Waste Disposal Problems at Research Facility

90AN0359A Sutton *INTERNATIONAL MANAGEMENT in English Jul 90 p 16*

[Article: "'Critical Mass' Mismanagement"]

[Text] Belgian authorities are facing a nightmare task cleaning up potentially deadly deposits of nuclear waste near the sleepy village of Mol in Flanders.

The nuclear remnants, much of which has been stored with blatant disregard for accepted international safety standards, pose a hazard not only to local residents but to workers charged with its disposal.

Government officials have known for more than two years about the unsafe stores of radioactive debris at the site of CEN, Belgium's national foundation for nuclear research. But only now is the extent of the massive cleanup operation that will be needed to make the waste safe becoming clear.

ONDRAF, Belgium's national radioactive waste authority, has been trying to unravel the problem since late 1987, when it took over control of CEN after it became linked to the "Transnuclear" scandal of illegal shipments of radioactive waste with a private West German transport company.

Investigators unearthed widespread cases of criminal fraud, including bribes and kickbacks at CEN, which was a hive of mismanagement. Falsified inventories and deliberate mislabeling of barrels of nuclear waste were common practice. General record-keeping received low priority, as Mol house owners recently discovered when a pipe carrying expelled cooling water from a nearby nuclear power plant sprung a leak. The treated water

contains only minute, nonthreatening quantities of radiation. But, it seems, CEN never bothered to tell the housing developer or residents about the pipe, which runs just 70 centimeters below their gardens.

Far more frightening are the lethal "surprises" that keep cropping up on CEN's premises. Among them are a concrete water basin originally built for emergency storage. It was regularly used to drain the overflow of cooling water from CEN's test reactor and discharge from a low-level solid waste incinerator. Irradiated water and soot have contaminated the soil, and ONDRAF must now figure out how to neutralize 300 tons of dried, deadly mud.

Elsewhere, there are 2,000 unlabeled concrete containers with low- or medium-level radioactive waste. Most appalling is a wooden hut that was used to store contaminated tools, spare parts and equipment. So far, only a couple of officials involved in the Transnuclear kickbacks are facing charges. All the others are protected. "CEN is full of political appointees," says an industry source. "They'll get off scot-free. That's the politics of mediocrity in Belgium."

## FEDERAL REPUBLIC OF GERMANY

### FRG, GDR Environmental Issues Discussed

90MI0273A Bonn *WISSENSCHAFT, WIRTSCHAFT, POLITIK in German No 22, 30 May 90 p 4*

[Text] FRG industry intends to make its know-how on technical environmental protection and corporate environmental protection management available to firms in the GDR. To this end, a nonprofit organization called "Industrial Initiative for Environmental Protection in the GDR" has been founded at the instigation of the Chairman of the Confederation of FRG Industry (BDI), Dr. Tyll Necker.

According to the BDI, the organization's purpose and the goal of its work are to promote practical environmental protection in the GDR. The initiative will primarily prepare the way and act as a clearinghouse for corporate environmental issues among FRG and GDR firms. This also includes arranging access to environmental technology, which in individual cases may, for example, involve the provision of measurement instruments. But how West German firms can help GDR concerns in ways other than selling them technology is considered equally important. This will primarily take the form of exchanges of experts on applied corporate environmental protection technology and the dissemination of management know-how regarding the implementation of environmental protection strategies within companies. The work schedule includes the following projects:

- Arranging contacts between FRG enterprises and environmental experts from GDR firms so that the latter can sit in on the West German firms' work;

- Arranging contacts on environmental matters in FRG firms in collaboration with the Association of Environmental Officers;
- Cooperating with the planned advisory center on environmental protection in Halle;
- Participating in the technical workshops planned by the FRG Working Group on Environmentally-Aware Management (BAUM) and the environmental promotion group "Future" in the GDR;
- Issuing the complete guidelines of the VDI [Association of FRG Engineers] Clean Air Committee for the GDR.

This range of tasks will be performed for all branches of industry. The organization's work may be supported on an informal basis or through practical aid, e.g., by exchanging experts or supplying goods and services. However, the initiative also needs financial help. As it will be financed mainly by donations, the membership fee for companies and both legal bodies and individuals has been set at a flat rate of 500 Deutsche marks [DM].

#### **FRG, GDR Cooperate in Combatting Sea Pollution**

90MI0292A Bonn *TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN* in German  
No 529, 15 Jun 90 pp 11-12

[Text] The institutes of oceanography in Kiel and Warnemuende (GDR) will jointly collect further information on the concentration and distribution of heavy metals in the western area of the Baltic Sea under a project financed by the BMFT [FRG Ministry of Research and Technology]. Heavy metals such as lead, cadmium, copper, cobalt, nickel, and zinc, which are present only in low (natural) concentrations in unspoiled marine areas, can often reach very high levels in offshore and coastal areas polluted by large quantities of domestic and industrial effluent. These increased concentrations can be detected not only in the water (in solution) but also in the plankton and sediments (in particles). During a given year, the intensive mixing of water heads (as a result of wind and cooling), massive algae blooms, or oxygen depletion on the seabed can give rise to significant variations in concentration in both the particle and solution phases.

The joint project carried out by the two Baltic institutes will provide the geochemical foundation for a better understanding of the variability of these potentially harmful substances in time and space. The research will focus primarily on the Bays of Kiel and Mecklenburg as this area is of direct interest to both countries, and also because both institutes have already measured many other environmental parameters there, thus providing the basis for a comparative study of the ecological state of these coastal areas.

This survey is required as a basis for short and medium-term forecasts of variations in heavy metal concentrations and is fully in line with the objectives set by the

Helsinki Committee for the Protection of the Baltic Sea. Work on the following issues will be given priority under this inter-German project:

- Is there a seasonal trend (i.e., an annual sequence with low concentrations in spring and summer and higher contents in winter) for dissolved heavy metals, such as cadmium, nickel, zinc, etc., in the Western Baltic as there is for nutrients such as phosphate, nitrate, or silicate?
- What is the concentration of particle-bound metals in the Baltic Sea plankton and to what extent can it rise in the event of a massive algae formation subsiding?
- What is the effect of the quantities of metal that are released at the sediment/water heads during what are known as stagnation phases, i.e., at times of oxygen depletion on the seabed?
- Is there correlation between salt concentration variations and heavy metal concentrations in the western Baltic? In other words, is it possible to predict heavy metal contents simply on the basis of salt concentrations?

This project will be carried out by marine chemists from both institutes headed by Doctor K. Kremling of Kiel Institute of Oceanography on Kiel's research vessels "Poseidon" and "Alkor". It is scheduled for completion by early 1993.

#### **Ministry Funds Water Purification Program**

90MI0294A Bonn *TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN* in German  
No 530, 29 Jun 90 pp 4-5

[Text] The main concern of FRG water supply and disposal authorities is to ensure that the quality of water meets adequate health and environmental standards. Presenting a new subsidy program on water, which will form part of the environmental research program, Minister Riesenhuber stated that the major objectives include water protection, for which efficient sewage treatment techniques are essential, and the development of modern water purification techniques to produce drinking water from lower grade untreated water.

Whereas the quality of most watercourses has considerably improved since the 1970's, more intensive farming, seepage of pollutants from carelessly located garbage tips and disused toxic dumps, and industrial pollution have increased groundwater pollution.

BMFT [Ministry of Research and Technology] funding to date has focused on aspects such as the development of better water purification techniques, including methods using a combination of ozone and activated carbon in waterworks. These methods use various combinations of processes such as oxidation, biological decomposition, absorption, and filtration through activated carbon filters to purify water. Dispensing with pure chlorine and the oxidating agent, or highchlorinating, as it is known, is a decisive step, because it produces harmful chloro-organic compounds. The FRG is thus

taking on a pioneering role in water purification techniques at the international level, said Riesenhuber.

The increasing level of nitrate pollution in many groundwaters poses a further problem for drinking water supplies. The BMFT allocated about 28 million Deutsche marks [DM] in subsidies to 32 projects under the "Nitrates Removal" subsidy program. New solutions have been developed and tested on a semi-industrial and industrial scale under this program; they include physical processes, such as reverse osmosis and electrodialysis, physical-chemical processes (e.g. selective ion exchange), and biological processes.

Another priority of the BMFT subsidy program was to develop an efficient method for purifying domestic, industrial, and special effluent such as seepage from waste dumps. In addition to multistage biological methods for purifying domestic sewage, new developments include evaporation methods, separating systems based on membrane technology (reverse osmosis, electrodialysis), absorption procedures, and biotechnological purification methods.

Progress has also been made in sewage sludge recycling and disposal. New developments include new organizational models for recycling sewage sludge for use in agriculture and procedures for recovering phosphorus, iron, salts, and heavy metals from sewage sludge.

The new subsidy program will lay stronger emphasis on preventive environmental protection. Environmental pollution must be prevented at source. Scientific research will improve knowledge of ecological interrelationships and create the basis for improvements in preventive technology. Recovery and recycling may be given priority only where emissions and pollutants cannot be avoided, as in the case of sewage sludge. Then, and only then, will the principle of nonpolluting disposal and safe dumping of the residue be considered.

The subsidy program focuses on the present and foreseeable priority problems facing the water sector:

- Various agricultural pollutants due to intensive soil exploitation;
- Accidental industrial emissions;
- New micropollutants, known as xenobiotika [Xenobiotika], which cannot be removed in sewage treatment plants. They originate in substances such as the active agents used in plant treatment and protection products, nitrogen infiltrations into groundwater, emissions, from waste tips, leaking sewers, and disused toxic dumps;
- Increasing quantities of sewage sludge due partly to improvements in sewage purification and partly to the increasing contamination of sewage water with pollutants.

R&D projects in the following priority areas will be subsidized: groundwater protection, water ecology, water protection, water supply, municipal sewage disposal, water analysis, and control technology. Particular

importance is attached to the practical demonstration of different environmental techniques, developed in the laboratory but not yet tested on an industrial scale, for solving problems such as leaking sewers, liquid manure disposal and recycling, or the ecologically-based decontamination of small watercourses.

Since 1982 the BMFT has allocated about DM114 million for water research (water ecology, hydrology, water supply, and sewage water and sludge disposal). An approximate total of DM350 million will be set aside for the "water" subsidy program under the Environmental Research and Technology Program from 1990 to 1994.

#### **Environmental Commission To Protect Elbe, Purify Water**

90WN0273A Munich SUEDEDEUTSCHE ZEITUNG  
in German 8 Aug 90 p 21

[Article entitled: "Protection of Inshore Waters Still Causing Problems: Pollutant Burden Still High—Immense Need To Catch Up in the GDR"]

[Text] Protection of inshore waters continues to cause problems in the FRG, in spite of intensive efforts to keep water pure. According to data in the 1989 Annual Water and Waste Report, jointly presented by the Federal Environmental Ministry and the Federal Ministry of Agriculture, for the first time on Tuesday, considerable pollution of inshore waters with dangerous materials still exists. The risks for groundwater and the pollution of the North Sea and the Baltic Sea will become increasingly evident. Pollution of GDR inshore waters is frightening. In October in Magdeburg, the bordering countries want to found an Elbe protection commission, for the ecological redevelopment of the Elbe.

In the words of Parliamentary Secretary of State in the Federal Environmental Ministry, Wolfgang Groebl (CSU [Christian Social Union]), not only the pollutant level of the Elbe, but also that of the Rhine causes concern. Overall, Federal German inshore waters are polluted with toxic materials and heavy metals that are difficult to break down and also with nitrogen and phosphorous. Meanwhile, investments of considerable magnitude have brought about considerable advances in inshore water protection in recent years. Ninety-two percent of the population within the federal territory are currently connected to sewerage systems. Eighty-six percent of waste water is being biologically purified. The Federal Republic assumes an eminent worldwide position in this regard. Inshore water pollution due to oxygen decimating substances and heavy metals has also been reduced. The desired inshore water quality class II (moderately polluted) of the Rhine River has mostly been achieved. The variety of small organism species has increased from 27 to 97 in the Rhine River basin since

1971, and there are now 39 species of fish in the Rhine. Inshore water pollution due to phosphates from detergents and cleaning substances is greatly reduced. Phosphorous pollution was 42,000 tons as recently as 1975 but fell below 5,000 tons at the end of 1989. There were no indications that synthetic substitutes like NTA [nitrilotriacetic acid] contained in laundry detergents contributed to increased pollution and new inestimable environmental risks. However, industrial and communal initiatives for continued reduction of pollutant conduction, primarily for the reduction of so-called "nutrient conduction" by agricultural fertilizers and sewage are necessary. An investment expenditure of DM15 billion would be required just to reduce nutrients in community sewage treatment plants. According to information from the Parliamentary Secretary of State in the Federal Ministry of Agriculture, Georg Gallus (FDP [Free Democratic Party]), the Federal and Land governments will spend sums amounting to DM500 million annually to reduce nutrient pollution in inshore waters in the future. Appropriate initiatives were listed in a joint plan of action with the laender.

Once again, Gallus expressly rejected fears that drinking water quality has been jeopardized in isolated regions of the FRG by pesticide pollution. The new drinking water statutory limits in effect since October 1989 did not result in the dreaded water emergency. In addition, there is a plan to outlaw the use of the pest control substance Atrazin, effective the beginning of 1991. Gallus criticized businesses and cooperatives which are currently trying to sell farmers supplies of pest control substances containing atrazin with the promise of taking back residual inventories starting 1 January 1991 and selling it in foreign countries.

According to a determination by the Federal Government, there is an "immense need to catch up" in the GDR with regard to inshore water protection. For example, the rate of connection to sewerage systems in the GDR is only 70%. Groebl said only 60% of this collective sewage has been treated in sewage treatment plants. In addition, sewage treatment plants are in deplorable condition. The City of Dresden, for example, with 400,000 inhabitants currently has no functioning sewage treatment plant. Elimination of the need to catch up must be pursued with substantial means without delay. The private economy must be activated to mobilize in this area because taxpayers are overburdened in this regard.

The Annual Waste Management Economy Report indicates that great challenges must still be overcome in this area in spite of successes achieved. Serious refuse and sewage disposal bottlenecks exist primarily in the area of uncommon waste materials, but also increasingly in the household waste sector, according to Groebl. Therefore, great significance is attached to the construction of a comprehensive network of waste incineration installations. It is guaranteed by virtue of the 17th Federal

Emissions Protection Statute that threatening dioxin pollution resulting from refuse incineration remains limited to minimal levels.

### Ministry Funds Ocean Carbon Dioxide System Research

90MI0300A Bonn *TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN* in German  
No 529, 15 Jun 90 pp 10-11

[Text] Within our climatic system, which is made up of atmosphere, oceans, cryosphere, and biosphere, the ocean plays an important role both as a source and, more importantly, as a sink for CO<sub>2</sub>. Calculations based on models have shown that the ocean currently absorbs about half the CO<sub>2</sub> generated each year. The proportion could be further increased if a marked reduction were achieved in CO<sub>2</sub> emissions. This would in turn be reflected in CO<sub>2</sub> concentrations, thus helping to slow down the warming of the earth.

We still know too little about the chemical processes that occur in the sea to assess the potential for CO<sub>2</sub> exchange between the atmosphere and the ocean surface with any reliability. A pivotal factor in assessing CO<sub>2</sub> exchange is the difference in partial pressure between the atmosphere and the ocean surface. The BMFT [FRG Ministry of Research and Technology] has approved a project on this topic, which is being carried out by the Institute of Oceanography in Kiel (subsidy: 1.2 million Deutsche-marks; duration: May 1990 to February 1993). This partial pressure will be measured in relation to hydrographic and biological conditions, focusing in particular on deep water areas and regions with a marked seasonal variation in biological production.

The project will conduct intensive field studies on the oceanic CO<sub>2</sub> system in its search for answers to the following questions:

- 1. How great is the average CO<sub>2</sub> partial pressure difference between the surface of the North Atlantic and the atmosphere in different seasons? This data will form the thermodynamic basis for calculating the CO<sub>2</sub> flux between the ocean and the atmosphere.
- 2. How do hydrographic stratification, biological production and sedimentation, and fluctuations in CO<sub>2</sub> concentration affect CO<sub>2</sub> partial pressure formation on the ocean surface? Only when this process is understood can the ocean's reaction to the current increase in atmospheric CO<sub>2</sub> concentrations be assessed.
- 3. How pronounced is the seasonal and short-term variability of the total CO<sub>2</sub> content and alkalinity of the various zones of the North Atlantic? This margin of natural fluctuation must be known and understood before the anthropogenic signal can be "filtered out" from long-term observations and the extent of the ocean's CO<sub>2</sub> absorption thus be documented.
- 4. How does the carbonate system change in relation to depth? Conclusions may be drawn regarding the dynamics of CO<sub>2</sub> circulation within the ocean, which

is triggered by the production or remineralization of biological material and the vertical mixing of the waterheads, on the basis of both vertical profiles of the individual species in the carbonate system and measurements of nutrient concentrations. The description of this process is an essential requirement for the modeling of the global carbon cycle.

- 5. In what compositions and concentrations are organic acids present in solution at the ocean surface, and how do they vary with depth? This information is required so that the alkalinity variable may be used to calculate the CO<sub>2</sub> species.

The first interim findings, which will also be made available to the

major international programs: WOCE (World Ocean Circulation Experiment) and JGOFS (Joint Global Ocean Flux Study), are expected in 1992.

#### **Biotechnology Applications in Ecology Discussed**

90MI0277A Bonn *TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN* in German  
No 527/528, 28 May 90 pp 18-19

[Text] With the foundation of the European Environmental Research Organization (EERO), committed scientists have joined to form a new research organization to enhance the exchange of findings and strengthen international cooperation on environmental research.

Together with the Society for Biotechnology Research (GBF), a major FRG government research institute, EERO organized a one-week symposium on the application of biotechnology to environmental protection in Braunschweig from 23 to 27 April 1990.

If mankind wants to treat its natural environment in a responsible manner it must, as far as possible, avoid harmful emissions. By developing new, environment-friendly products and production processes, biotechnology will make a considerable contribution in this respect in the future.

Biotechnology opens up many opportunities, not only to develop completely new processes, but also to apply preventive disposal techniques that convert and recycle the polluting by-products of conventional production processes. Processes for extracting biogas from liquid dairy waste, liquid pig manure, or waste cellulose or starch production liquid show that these methods increase the environment-friendliness of production processes and make for fuller exploitation of the basic raw materials.

Biotechnology also provides a better understanding of biological processes for treating solid waste and sewage, which are already used in municipal sewage works, and makes it possible to develop them further. Biological air filters are a more recent development that can help avoid the nuisance of unpleasant odours.

Environmental biotechnology thus includes both the biological decomposition of pollutants before they are released into the environment and particularly sensitive biological methods for detecting toxic agents in the environment, using biosensors for example.

However, environmental biotechnology can also be used to detoxify substances that have already been released into nature as environmental pollutants. Microbiological processes that decompose the pollutants in the soil fall into this category.

The Braunschweig symposium aimed at reviewing the present status of knowledge about microbiological processes for decomposing pollutants and their many potential uses in biotechnological environmental protection processes.

For the next three years, the FRG's DM1 million annual subsidy to EERO is being provided by the Volkswagen Foundation.

#### **Ministry Subsidizes Polysaccharide Research**

90MI0242X Bonn *TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN* in German  
28 May 90 pp 4-5

[Text] For about two years the BMFT [Federal Ministry for Research and Technology] has subsidized a joint research project on polysaccharides in the field of regenerating raw materials. The project was developed with the substantial participation of the cellulose-and starch-processing chemical industries of the Chemical Industry Association and jointly with representatives of technical institutes.

As part of this project, the BMFT is currently subsidizing 17 projects at 13 different universities and research institutes for a total of approximately 10 million Deutsche marks [DM].

The goal of these efforts is to reduce the research and training gap in this field that resulted from years of lack of research, thus creating the need to guarantee the current uses of polysaccharides in the chemical industry by improving ecological and economic procedures.

In addition, new application fields for these regenerating raw materials need to be developed. In this way the chemical industry will be guaranteed a constant supply of raw material for the production of biologically decomposable products, and at the same time a contribution will be made toward reducing surplus agricultural production.

Polysaccharide research centers will be set up again at universities to train a new generation of research and teaching scientists and to establish a scientific basis for industrial activity in the field of polysaccharide chemistry.

The projects deal with the problems related to the analysis of polysaccharides and polysaccharide products,

their isolation and derivation, with particular attention to emission-free cellulose production and bleaching as well as the discovery of ecologically safe and inexpensive derivation processes. A third key project is the production of new polymers using carbohydrates or carbohydrate components. Research is underway in this field to develop polysaccharides for medical applications and, in combination with synthetic base material, for the production of polyamides, polyvinyl saccharides, polyesters, and polyurethanes.

Some of the results achieved so far are promising. After the end of the starting phase in late 1991, which is 100-percent subsidized by the BMFT, industry will financially participate in various projects and, together with research institutes, will promote the industrial application of the findings obtained in pilot plants.

This type of procedure has already been concretely applied in one project for the ecological production of chemical cellulose. Progress in this field is urgently needed since the processes currently used can no longer meet environmental protection requirements in an economically justifiable way, and since the cellulose-processing industry's requirements for raw materials are increasingly covered by imports, in which specific quality requirements cannot always be met satisfactorily.

Results were also obtained in the synthesis of new polymer materials from carbohydrates, which justify a substantially more intensive continuation of this line of development.

## FRANCE

### Government, Industry Plan Clean Auto Engine Research

90AN0362A Paris SCIENCES & AVENIR in French  
May 90 p 12

[Text] Cleaning up is great, but not dirtying is even better. This piece of common sense will be applied to French research over the next 10 years with a view to developing environmentally friendly cars that are easy on gas consumption. Nowadays, pollutants are filtered using catalytic converters. Tomorrow, engine design will have to ensure that effluents are not harmful to the air we breathe.

The recently signed agreement involves three ministries (Transport, Industry, and Research), two French car manufacturers (Renault and the PSA [Peugeot] group), as well as state research organizations such as the French Petroleum Institute, the Atomic Energy Commission (CEA), and the National Center for Scientific Research (CNRS). The research program actually implies a general overhaul of present day engines, focusing on the study and modeling of combustion and the impact of ignition, fuel, and lubricants on the emission of pollutants.

This improvement in conventional engines will not stop researchers from exploring other possibilities, notably

the two-stroke engine, whose nitrogen emission is inherently low, but whose current level of consumption is too high with often substantial discharges of unburned hydrocarbons. To remedy this, a higher-performance electronic injector is under consideration with an improved capacity to control gas flows. Smaller vehicles could be fitted with engines similar to those of top-of-the-range models with reduced consumption.

Other research subjects are: substitute fuels (oxygenated or natural gas compounds), electric urban cars (with a 500-km range compared to the current 100 km), gas turbines, hydrogen engines, and new battery designs.

The program is receiving substantial funding to the tune of Fr. 1.2 billion over 8 years. In other words, PSA's and Renault's research efforts will triple over the next 6 years. In 1987, the research and development budget for each of two French manufacturers was Fr 3.9 billion. By way of comparison, in the same year, General Motors had a budget of Fr 28.4 billion; Ford, 16.3 billion; and Toyota, 10.4 billion. The protection of the environment is definitely benefiting industrial competitiveness.

## ITALY

### Company Develops Air Monitoring Equipment

90MI0315A Rome FINMECCANICA NOTIZIE  
in Italian 30 Jun 90 pp 19-20

[Text] Elecos, Electronic Ecology Systems, a Rome-based company specialized in the design, development, and marketing of sensors and electronic measuring devices to monitor the air, has developed a series of products considered the most advanced in the world.

The first, called APM-1 is used to monitor dust suspended in the atmosphere and has been approved by ENEL [National Electric Power Company], the FRG's PTB [Technical and Physics Institute], and RIVM [expansion unknown] in the Netherlands. It is being used by ENEA [National Committee for the Research and Development of Nuclear and Alternative Energies] in the Antarctic, the FRG, Hong Kong, Poland, and Spain. The second device, a variation of the first, is called APM Stack, and measures the pollution in industrial smokestacks. The third version called ABP Pb is a sensor designed to measure the presence of lead in dust samples collected and analyzed by the basic equipment.

The other Elecos devices are as follows: DM-1, an economical and competitive dust measuring system, COM-1, an innovative analyzer to measure carbon monoxide in the atmosphere; and AQM-1, an analyzer that can carry out the integrated monitoring of air quality at a considerably lower price than the instruments traditionally used to measure polluting compounds separately.



### Environmental Remote-Sensing Aircraft Developed

90MI0313A Rome AIR PRESS in Italian 1 Aug 90  
pp 1843-1844

[Excerpt] "The 'environmental remote-sensing demonstrator' project, the result of a time-tested and long-standing collaboration in the environmental sector between Aeritalia and ENEA [National Committee for the Research and Development of Nuclear and Alternative Energies], is the first portion of a more extensive project that aims to develop integrated networks (earth-air-satellite) for environmental protection." This is what the director of Aeritalia's Renewable Energy and Ecosystems Department, Engineer Francesco Zappala said about Partenavia's AP 68 TP 600 Viator aircraft, which is fitted with instruments for advanced aerial remote-sensing, at its presentation at Rome's Urbe airport.

Why resort to remote-sensing for environmental protection? "There are three reasons," said Dr. Gian Felice Clemente, director of ENEA's Environmental Department. The first: "surveying difficulties caused by a hostile environment (woods, mountains, lakes, deserts, the poles, etc.), or political opposition primarily 30 years ago;" the second: "the vast areas to be explored;" and the third: "some environmental features can only be determined on a certain scale (climatology, oceanography, etc)." This led ENEA and Aeritalia to focus on a project that centers on the "demonstrator" or airplane, but which takes good account of the other terms of the problem by indicating a need to establish a complete environmental monitoring network from all points of view.

The basic idea of the project is to succeed in establishing a multifaceted agency that can offer a complete range of services to its users (hypothetically public bodies, from regions to townships, from provinces to the Ministry of the Environment) and provide them with the answers to a wide range of questions in a very short time frame. For example: Should coastal pollution be monitored. A remote-sensing aircraft can through programmed "passages" (one, two, three, or more times a year), photograph the situation as it evolves, highlight the differences, identify the sources of pollution, and point its camera on the different causes.

Or: should it identify the sources of fires at the very moment they start and enable civil defense forces (from fire fighters to forest workers to "fire extinguisher" aircraft, etc.) to intervene in time. Even in this case, the combination of modern technology and the projected network can give positive results, by eliminating the procedures currently in use which often cause substantial delays, with the result that the fire fighting aircraft reaches the location hours later when most of the damage has already been done. "In the field of environmental remote-sensing," Eng. Zappala commented, "the strategic program in which Aeritalia intends to insert itself consists of: the study, management, development, and integration of innovative systems (remote-sensing by aircraft, high technology sensors, simulation models);

the development, implementation and testing of mathematical simulation models for agricultural meteorology, air and water pollution, geohydrology, and forest fire forecasting; the development, creation, integration, and management of innovative instruments to collect environmental data; the development and creation of integrated platforms for remote-sensing and, if necessary, specialized aviation; services for remote-sensing aircraft missions; and the distribution of raw or processed geographical data (thematic maps, etc.)." Aeritalia has already established two companies to put these ideas into practice: The first is Samantha, an aircraft company which is pending approval from Civilavia. To begin with, Samantha will manage the Viator "demonstrator" which is equipped for remote-sensing operations (and two others in the future what will support it in the projects). The second company called Telaer, is a joint venture with Telespazio to use the satellite messages to be compared with the other information that the hypothetical network designed by ENEA and Aeritalia will put at the user's disposal. [passage omitted]

### Biofactory for Ecological Agriculture Established

90MI0260A Milan ITALIA OGGI in Italian  
9-10 Jun 90 p 25

[Article by Rita Gambeschia: "New Squads of Insects Will Protect Our Crops"]

[Excerpts] They are the guardians of plants, the natural protectors of fruit and vegetable gardens, and the sworn enemies of those who dare invade their territories. We are talking about insects, but of a slightly special kind: Those used in the biological struggle [lotta biologica] against their fellow creatures, the insects that damage horticultural products.

After Bioerre of Crespellano (Bologna), which produces nematodes, and CRC of Udine, which specializes in bacterial preparations that are equally effective in plant protection, another biofactory has been established at Cesena that will produce four types of insects: *Chrysoperla carnea*, *Diglyphus isaea*, *Phytoseiulus*, and *Encarsia formosa*. Difficult names you almost have to fight with. In fact, this is a war. The *Crysoperla* is a predatory insect that is used against aphids in particular; the *Diglyphus isaea* is the enemy of a small insect with an untranslatable name, *Lirio-myza trifoli*; the *Phytoseiulus* has a preference for little red spiders; while the *Encarsia formosa*'s adversaries are the so-called white greenhouse flies. The breeding of these four organisms should permit a biological struggle to be carried out over 1,500 to 1,800 hectares of land, with a consequent overall saving in insecticides and acaricides of approximately 18,500 kg per year. The biofactory, which is owned by the Cesena Fruit and Vegetable Center and was established with funding from the regional authority of Emilia-Romagna and by ENEA [Italian Committee for the R&D of Nuclear and Alternative Energies], relies on the University of Bologna's Institute of Entomology and on ENEA's



Tecab department for scientific guidance. It is an extension of Biolab, established in 1982 as the first laboratory of its kind in Italy, with the task of testing "mass" insect-breeding techniques, verifying the effectiveness of these insects (the latest to be put to the test is the *Edovum Puttleri*, originally from Colombia, which should succeed in fighting potato and eggplant *Dorifura*), and supplying technical advice to operators throughout the country.

There is a growing interest everywhere in the biological struggle, and now, two years after the project called "National Defense Plan using Integrated Techniques" [Piano nazionale di difesa con la lotta integrata], which was never implemented, the Ministry of Agriculture has presented the Council of Ministers with a bill to be submitted to the environmental protection, health, and industry ministers for their opinion. This interest is motivated both by market-related factors as well as ecological concerns. According to a survey carried out by ISPES (Institute of Political, Economic, and Social Studies), 95 percent of the Italian population supports biological products and is willing to pay up to 30 percent more to buy natural apples.

"A very important aspect, however," stated Piero Botteghi, a Biolab technician, "is having a qualified staff. Technicians are usually trained on site, and Biolab provides regular guidance as well as training courses. A postgraduate school of agrobiotechnology for agricultural graduates will now be established at Cesena, with biological techniques also included among its subjects." [passage omitted]

The combined use of several "ecological" methods, together with a cautious use of chemical products, is referred to as integrated techniques (it is estimated that in Italy alone this involves 15,000 hectares of land, as shown in the table). According to entomologist Giorgio Celli, one of Biolab's scientific consultants, who estimates that the biological product market currently amounts to approximately one percent of the chemical product market: "Chemical products are still necessary today, but they can be used in more intelligent ways if they are compatible with biological techniques and combined with other systems as well: For example, reverting to less extensive single crop farming and to crop rotation." However the 'buts' still remain: It is estimated that biological products still cost 30 to 40 percent more than chemical products. Supposedly, the principle cause of this is technical assistance, which is particularly necessary at the initial stage. "But when calculating costs," Celli added, "several factors should be taken into account: The amount of money being spent for depollution, and the advantages in terms of health. In addition, the biological struggle is particularly necessary in cases where insects have developed some resistance to pesticides. On the other hand," the entomologist concluded, "industrial reconversion is currently underway, especially as far as microorganism production is concerned. However, this will be a long and costly process."

#### Ecological Agriculture in the EEC

	Total number of farms	Total area (in hectares)
Ireland	80	1,500
UK	900	13,000
Belgium	150	1,300
Netherlands	300	4,000
Denmark	536	4,500
FRG	2,400	36,000
Portugal	15	323
Spain	378	2,714
France	5,000	75,000
Luxembourg	10	100
Italy	1,000	15,000
Greece	0	0

Source: AICA

#### Power Company's Electric Car Project Described

90MI0285A Rome HI-TECH in Italian May 90 p 21

[Text] The scenario appears to come from science fiction: An "Electric City." However, ENEL's [National Electric Power Company] program is something very concrete that covers four areas of activity: A battery operated electric vehicle, the production of electric energy in the city, the computerized home, and environmental monitoring.

The greatest attention seems to be dedicated to the vehicle, or more particularly the electric automobile. So much so that ENEL has decided to launch an ambitious project for which it has been allocated 33 billion lire.

The first stage of ENEL's electric automobile challenge envisages a well-defined survey of the market prospects: The component standards and the tension levels necessary in the electricity-vehicle interface network; the safety problems; the proposal for insurance and tax concessions; and a scale of charges to encourage recharging the electric automobile at night, that is, when there is no risk of running into peak consumption times. The new automobile would be designed for ENEL first, since the program refers to an ENEL "fleet" of electric vehicles. However, the real challenge concerns the design and development of prototype components for the vehicle: Electronic control, motorization, and batteries. In fact, a large part of the program is dedicated to research on advanced batteries that can exceed the storage limits of those currently available.

ENEL has chosen four different electrochemical systems: Zinc-bromine, lithium-aluminum-ferrous sulfides, sodium-sulphur, and iron-air [ferro aria]. The objective is to develop technologies and patents that are entirely Italian. ENEL's choices must have been influenced by the success—or at least the success of the concept—of the electric Panda that Fiat is producing, even if at costs the success of the electric Panda that is being produced by Fiat, even if at costs substantially prohibitive for the market, and the race that

broke out among automobile producers. However, ENEL does not only aim at developing "prototypes" of electric vehicles.

On the contrary, a sector of activity that could prove to be more interesting, even for its market prospects, is recharging systems.

In fact the program involves developing various "solutions": A recharging system for industrial vehicles to be installed in parking areas that would eventually be integrated into pay parking meters; another system for garages, condominium parking areas, and those built by corporations and firms for their own personnel; and finally a service network to replace the complete range of batteries.

A special feasibility study will be dedicated to an infrastructure for electric automobile rentals in large cities.

There is no lack of participation by private and public industries in ENEL's program, which should be completed over the next three years: Marelli, for the development of the sodium-sulfur batteries; Ginatta, for the lithium-ferrous sulphide die; Ansaldo, which could contribute to research on electronics and control instruments; and Fiat, Efim Breda, and Idea for the design of the prototype vehicle for ENEL's "fleet." The objectives of the program also include the possibility of patenting the most important know-how resulting from the research and, eventually, signing international agreements.

The Costs of the Program

Activity	CESI [Italian Electrical Engineering Test Center]	Services Entrusted to Third Parties	Total
1. Survey of the electric vehicle's prospects	500		500
2. Preparation of technical specifications and preliminary evaluation		500	500
3. Design and development of component prototypes			
—regulating electronics	4,000		4,000
—motorization			
—innovative Pb batteries			
4. Advanced battery R&D			
—Sodium-sulfur batteries	12,000		
—Lithium-ferrous-sulfide batteries	11,000		23,000
5. Design and experimentation of electric vehicle prototypes		4,000	4,000
6. Design and experimentation of recharging systems for electric vehicles	1,000		1,000
Total costs	28,500	4,500	33,000

\*in millions of lire

## NETHERLANDS

### Environmental Program Funding Increased

90AN0342A Brussels EUROPE in English 18-19 Jun 90  
p 16

[Report: "Environment/Netherlands: Government Reinforces Its Protection Scheme"]

[Text] The Hague, 18 June (EU)—The Dutch Government has presented a complement to the national scheme for environmental protection (adopted in May 1989), in order to "intensify and accelerate" its environmental policy. On the financial side, this complement will lead to an increase of one billion florins to the 14.95 billion florins of the "1st version" of the scheme. Changes brought about as compared with the initial scheme provide for stabilisation of carbon dioxide exhaust at the present rate as from 1994/1995 (instead of the year 2000) and then a decrease from three to five percent for the end of the century. The government will

be able to decide upon any additional measures during the next report of the scheme, in 1993.

On the other hand, the Netherlands hopes to limit the growth of motor vehicles to 35 percent in the year 2010. To achieve this, the government will take measures to reinforce public transport, and will establish in 1994 a toll for access routes and tunnels in the outer districts of the Amsterdam-The Hague-Rotterdam region. It will create, in 1992, a sticker (to be purchased) for driving at rush hour.

### Trash Incineration Causing Dioxin Pollution

90WN0227A Rotterdam NRC HANDELSBLAD  
in Dutch 17 Jul 90 p 3

[Article by Dick van Eijk: "Trash Incineration Exceeds All Standards for Dioxin"]

[Text] Rotterdam, 17 July—Last year the Netherlands still had some 12 trash incineration installations for domestic refuse. Yesterday the one in Leeuwarden was

shut down because dioxin emissions were judged to be too high. Earlier this year the installations in Alkmaar and Zaandam closed for the same reason. The remaining nine installations have not yet had their turn under the monitoring program which is being conducted for the Ministry of Housing, Physical Planning and Environment.

It is no surprise that the installation in Leeuwarden has been shut down. In all probability the installations in Leiden, Amsterdam, and The Hague will also be closed, as none of them comply with Incineration Directive '85 (RV '85) and refitting them is probably not practical. The installation in Leiden does not comply with the licensing requirements and will be closed in September of this year at the latest. The one in Amsterdam North is permitted to remain open for the present because compliance with RV '85 was not included in the licensing requirements and work is already under way on a new installation in Amsterdam West. The latter should be ready in 1994 and then the old one can shut down.

RV '85 does not include standards for dioxin but it does for particulate matter: No more than 50 micrograms (one microgram is one-millionth of a gram) of particulate matter per cubic meter of flue gas may be emitted. Barely three trash incineration installations comply with this standard at present: Duijven near Arnhem, Nijmegen, and Dordrecht. The ones in Rotterdam, Rozenburg, and Roosendaal are undergoing refitting to comply with the standard. In the meantime, a new standard has been published—Incineration Directive '89 (RV '89). The maximum particle emission according to this directive is 5 micrograms per cubic meter, and not a single installation complies with it. Existing installations have until November 1993 to comply with it. A standard for dioxin has indeed been included in RV '89: Emitted particles may contain a maximum of 0.1 nanogram (one nanogram is one-billionth of a gram) of dioxin toxic equivalency per cubic meter. That requires some explaining.

Although the term dioxin is common in everyday speech, there are always dozens of different substances involved and not all of them are by any means equally poisonous. It is known that 17 of these substances build up in the organs and fatty tissues of mammals. Because it is more convenient to work with one unit of measurement, quantities are corrected for toxicity. The expression 0.1 nanogram of toxic equivalency (TEQ) means that so much of all kinds of dioxins is present in a sample that together they are as toxic as 0.1 nanogram of the most toxic variety.

Exactly how dangerous dioxins are for human beings is not known. According to a standard established in 1982, during his lifetime a human should not take in more than an average of 4 picograms (there are 1,000 billion picograms to a gram) per kilogram of body weight per day. Thus, for someone weighing 60 kg, that is 240 picograms per day. According to data from the National Institute for Public Health and Environmental Hygiene

(RIVM, the institute that analyzes dioxin samples), the average Netherlander is now taking in 119 picograms per day, which is half of the standard. Approximately one-third of it comes from milk fat.

Because milk fat is such an important source of dioxin for humans, there is a directive on this in the Netherlands which allows a maximum of 6 picograms per gram. It is extraordinarily difficult to determine reliably how much dioxin there is in milk fat from a certain area, however. In the first place, very tiny amounts are involved. In the second place, the amount of emitted dioxin that winds up on pasture land depends upon a variety of circumstances—on the weather, for example. For that reason milk samples are collected at the RIVM over a period of 2 months in order to judge the dioxin content of milk fat from a particular area. Whether the milk from cows in the vicinity of the trash incineration installation in Leeuwarden contains too much dioxin cannot therefore be determined until September. If one drinks milk and eats cheese with a somewhat too high dioxin content for a while, it does not present a danger. The standards for consumption have been averaged out for an entire lifetime, after all, and therefore there is no reason for panic in Leeuwarden.

At present, not a single Netherlands trash incineration installation complies with the dioxin standard of a maximum of 0.1 nanogram per cubic meter of flue gas established by RV '89. Dioxin standards in regard to trash incineration installation emissions have recently been in effect in Sweden and Denmark as well, but in Germany there is still only a standard regarding particulate matter. Dioxins can be formed during the incineration of refuse containing chlorine, and PVC [polyvinyl chloride] is the biggest culprit in this regard. How many dioxins are formed is heavily dependent upon the temperature [of incineration] and thus upon the type of furnace. In the case of existing installations, dioxin emissions can be reduced by scrubbing as much particulate matter as possible. When constructing a new installation, modification of the furnace design is much more efficient.

## NORWAY

### Expert Commission To Deal With Environmental Issues

90WN0218B Oslo AFTENPOSTEN in Norwegian  
18 Jul 90 p 16

[Article by Knut Olav Amas: "Leaders To Participate in Environmental Committee"]

[Text] Norway will establish a blue-ribbon committee to make concrete proposals for saving the earth's environment. Society's standouts in business, research, and politics are waiting in line to participate in the assignment.

The Foreign Affairs Ministry, the Environmental Protection Ministry, and Parliamentary and Labor Party leader Gro Harlem Brundtland are among those who support establishment of the blue-ribbon committee. It is being established in close cooperation with the Fridtjof Nansen Institute, the Norwegian Foreign Policy Institute, and the Norwegian Research Council for Science and the Humanities.

"The makeup of the committee will be entirely clear by the first half of September," says Egil Sandberg, secretary general of the organization One World, to AFTEN-POSTEN. One World had its proposal for the committee approved this weekend by the worldwide parent organization World Association for World Federation.

Except for five foreign environmental experts, who will be corresponding members, the blue-ribbon committee will be entirely Norwegian. It will probably be composed of Storting representatives, former cabinet ministers, university professors, ecologists, Norwegian military officers, and business leaders.

The blue-ribbon committee for the environment will deal with the following areas: an economically and internationally binding UN arrangement to combat pollution of earth, air, and water; internationally binding UN legislation, including courts of law which can punish crimes against the environment; a UN system to monitor, prevent, and report pollution; UN efforts to combat ecocatastrophes.

The list of suggestions will be ready for the UN's world conference on the environment in Brazil in 1992.

## SWEDEN

### Forests, Crops Suffering Ozone Damage

90WN0276A Stockholm DAGENS NYHETER  
in Swedish 5 Jul 90 p 6

[Article by Sten Arndt: "Millions in Ozone Damage at Ground Level"]

[Text] Each year, high ozone levels on the ground in Sweden damage crops and forests to the tune of at least a billion kronor. This is proven by an investigation made by the Nature Conservation Board, which was reported in AKTUELLT yesterday.

Harmful ozone on the ground is not to be confused with ozone in the stratosphere which protects us against the ultraviolet rays of the sun.

Generally, ground-level ozone is formed when the heat from the sun reacts with nitrous oxide and hydrocarbons coming from automobile exhausts and air pollution. Ozone is a kind of aggressive oxygen which reacts readily with other substances. Given the chance, it takes a very long time to ascend to the stratosphere.

Ozone harms plants in several ways. It reacts with proteins and fatty acids in the cell membranes which affects the "breathing" of plants and reduces their ability to assimilate sunlight.

During the 1800's, the ozone content of the air was 10 parts per billion (ppb), now it is as high as 35-40 ppb in Sweden. Air pollution is to blame and the costs of the poorer harvests, especially of oats, potatoes and hay, have been worked out for the first time. The grain harvest alone is estimated to be 350,000 metric tons less annually than it could be.

If the increase in ozone is not halted, researchers believe that the wheat harvest will be reduced by 20 kilos per acre and year. In southern Sweden, where the problem is greatest, it is feared that the entire growing pattern will be changed.

It is also believed that a large part of the death of the forests is due more to ozone than to acidification.

### Eutrophication Affecting Entire West Coast Ecosystem

90WN0276B Stockholm DAGENS NYHETER  
in Swedish 16 Aug 90 p 5

[Article by Bo Carlsson: "Algae Taking Over the West Coast. Low Oxygen Content at Bottom Produces Fewer Fish"]

[Text] The west coast of Sweden has changed shape: green, stinking drifts of thread-shaped algae are washing up on the beaches.

"It is a sorry sight," says Kjell Johansson, a commercial fisherman from Halmstad.

During the last couple of years, there have been reports of extensive so-called blooming of algae. Now it is the thread-shaped algae, or green algae as they are also called, that are causing problems.

Researchers are following the spread of the algae at the Kristineberg Marine Biology station in Bohuslan.

"It is worse than ever this year," says Rutger Rosenberg, professor of marine ecology.

### Sour Odor

Brodde Almer, fishing consultant to the county of Halland, took DAGENS NYHETER (DN) to Gorvik, an inlet close to Tylosand in southern Halland.

A sour odor permeates the inlet. There are drifts of thread-shaped algae on the beach. Many areas of Halland look like this, from the Laholm Bay in the north to the Varo Peninsula in the south.

Kjell Johansson has been a commercial fisherman since 1974. During the last couple of years, he has concentrated on salmon and trout but his catches are getting

smaller. Yesterday's result was a trout weighing two kilos. A good catch for a weekend fisherman but not for a commercial one.

Kjell Johansson has to spend a great part of his working hours cleaning algae from his nets.

"If it continues like this, it is only a question of time before I hang up my nets for good," he says.

After their growing period, the algae die and sink to the bottom. Decomposition begins and the process requires large amounts of the oxygen that is in the water. Eutrophication of the sea favors both the thread-shaped algae and plankton algae. The fish flee and those animals that are not able to leave the affected area die.

The oxygen content on the bottom of the sea in southern Kattegatt is very low and everything points to a worsening of the situation. This is demonstrated by a large research effort which is currently being carried out on board the Danish ecological research ship, the Gunnar Torson.

The problem with eutrophication of the sea has existed since the beginning of the 1980's. The summer of 1988 was the worst. At that time, about 200 square kilometers of sea bottom were classified as dead after the extensive blooming of algae, 80 percent of the salmon fry died and crayfish were reduced in number.

#### **Fifty-Percent Reduction Required**

"The entire ecosystem of the sea is disturbed," says Brodde Almer. He sees only one solution to the problem: a 50-percent reduction in the discharge of nitrogen and at the same time a severe reduction in the discharge of phosphorous in the Kattegatt.

Commercial fishing is a hard-hit profession today. Salmon catches have been reduced by between 50 and 60 percent and many fishermen are contemplating other jobs.

Kjell Johansson once tried to clean his nets by hand—it took a week. Now he puts the nets under a tarp and the algae decompose after a couple of weeks. Then he rinses the nets with a high-pressure washer.

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